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Northumberland

Development Project

Ecological Assessment

Prepared by

CSa Environmental Planning

On behalf of

Tottenham Hotspur Property Co. Ltd.

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1.0 Introduction

1.1 This report has been prepared by CSa Environmental Planning on behalf of Tottenham Hotspur Property Company Ltd. It sets out the results of an Ecological Assessment of land at Northumberland Park, Tottenham where a mixed commercial, residential and football stadium development is proposed. The site is heavily developed and includes White Hart Lane football stadium and numerous commercial and residential buildings. This report has been commissioned to explore the potential for any ecological issues arising from the proposed redevelopment of the site.

1.2 This Ecological Assessment aims to:

- Undertake a desktop search for relevant biological records and assess their significance;
- Review the site in relation to its wider ecological context;
- Describe and map the habitats present at the site;
- Identify any potential protected or notable species issues;
- Present the results of further bat activity survey work;
- Specify any more detailed survey work that may be required;
- Evaluate habitats and species in line with standard methodologies;
- Assess potential impacts; and
- Recommend appropriate mitigation or wildlife enhancement measures, where possible.

1.3 This report follows a standard format accepted by ecological consultees across the country, adopting best-practice procedures and methodologies.

2.0 Planning Policy and Legislation

Planning Policy

National Planning Policy

2.1 The Government sets out its objectives for conserving and enhancing biodiversity in Planning Policy Statement 9[1]. This is the main source of Government guidance on nature conservation and considers the integration of nature conservation policies within land use planning.

The objectives of PPS9 are:

- *'To promote sustainable development by ensuring that biodiversity is conserved and enhanced as an integral part of social, economic and environmental development, so that policies and decisions about the development and use of land integrate biodiversity and geological diversity with other considerations.;*
- *To conserve, enhance and restore the diversity of England's wildlife and geology by sustaining, and where possible improving, the quality and extent of natural habitat and geological and geomorphological sites; the natural physical processes on which they depend; and the populations of naturally occurring species which they support.;*
- *To contribute to rural renewal and urban renaissance by:*
  - enhancing biodiversity in green spaces and among developments so that they are used by wildlife and valued by people, recognizing that healthy functional ecosystems can contribute to a better quality of life and to people's sense of well-being; and
  - ensuring that developments take account of the role and value of biodiversity in supporting economic diversification and contributing to a high quality environment.'

London Plan

2.2 The Mayor of London sets out principles for the protection and enhancement of biodiversity within the city through Policy 3D.14 of the London Plan, with the following statement of particular relevance:

- *'the planning of new development and regeneration should have regard to nature conservation and biodiversity, and opportunities should be taken to achieve positive gains for conservation through the form and design of development'.*

Haringey Unitary Development Plan 2006

2.3 The UDP aims to ensure that development protects and enhances the biodiversity of the Borough, through the following policy:

[1] Planning Policy Statement 9 (PPS9) (2005) **Biodiversity and Geological Conservation.**

OS11: BIODIVERSITY

All applications and development should respect the biodiversity of the borough, and ensure that the biodiversity is not diminished in any form, and that every opportunity is taken to enhance it. Such enhancements are particularly important in areas deficient in accessible natural green space.

The Council will resist development which would have a significant adverse impact on the population or conservation status of a protected species or species which have been identified as a priority in the UK, London or Draft Haringey Biodiversity Action Plan.

Where development is permitted which may cause significant harm to biodiversity, the Council will first seek to avoid or minimise the impact, then seek mitigation and finally invoke compensatory measures for any residual impacts.

2.4 To ensure that sustainability principles are incorporated into all development within Haringey the UDP contains a policy for the concerned with the environmental/natural resource aspects of sustainable development, of which the following section is relevant to this chapter:

UD2: SUSTAINABLE DESIGN AND CONSTRUCTION

"…the Council will seek that development schemes take into account, where feasible:

…m) biodiversity potential within, on and close to building structures, e.g. for bat roosting and feeding and/or other ecological benefits;

...Permission may be subject to conditions, e.g. to ensure that recycled materials are used or planning agreements, e.g. to secure the maintenance of new or existing ecological features."

Draft Supplementary Planning Guidance

2.5 Draft SPG 8d 'Biodiversity, Landscaping and Trees', provides guidance on biodiversity, tree protection, landscaping and green roofs. This includes the guidance that due regard must be had to the protected species and habitats as outlined in the Haringey Biodiversity Action Plan (BAP). Draft SPG 8g 'Ecological Impact Assessments' also states that the Council will have particular regard to the Haringey BAP in making an assessment on any application which could have ecological impacts. This SPG also provides examples of typical instances when ecological impact assessment is necessary.

Haringey Biodiversity Action Plan

2.6 The Biodiversity Action Plan (BAP) for the borough of Haringey provides a local programme of action to reflect the structures and priorities in the London BAP and the UK BAP. The Haringey BAP prioritises the conservation of those species threatened nationally or in London and species that are rare or of special interest locally. Key habitats and sites are also identified for protection and enhancement of biodiversity. The majority of actions for priority species are listed within the relevant habitat or site plans, with the exception of bat species which have a specific plan because these animals use several different habitats and a large number of species and individuals are found in the borough. Priority habitats and

species within the UK and London BAP that could be potentially relevant are considered even if they are not listed in the Haringey BAP.

Legislation

2.7 This assessment has been prepared taking account of the following legislation relevant to nature conservation:

- Conservation (Natural Habitats &c) Regulations 1994 (as amended)
- The Wildlife and Countryside Act 1981 (as amended)
- The Countryside and Rights of Way Act 2000
- Natural Environment and Rural Communities Act 2006

3.0 Methodology

Desktop Biological Records Search

3.1 A biological records search has been conducted to provide information on designated wildlife sites from the Multi-Agency Geographic Information for the Countryside (MAGIC) database and Greenspace Information for Greater London (GiGL) as follows:

- European/ Internationally statutorily designated sites within 5km
- Nationally statutorily designated sites within 2km
- Non-statutorily designated sites within 1km

3.2 Records of protected and notable species have been obtained from GiGL from approximately 1km of the site boundary and a search for additional protected or notable species records for the 10km square containing the development site (TQ 39) was conducted on the NBN Gateway.

3.3 Relevant information received is included within the main text, with additional details included in Appendices A and B.

Field Survey

Site Survey Methodology

3.4 An extended Phase 1 survey was undertaken by Luke Casey AIEEM on 15 May 2008, which involved mapping and recording each habitat type and making notes on any evidence of, or potential for, the presence of protected or notable species. This is at a level intermediate between the Phase 1[2] survey (where standardised habitat mapping is undertaken together with making notes on dominant and notable species) and the more detailed (Phase 2) survey techniques that may be used to specifically record or survey particular habitats or species.

3.5 In this survey, plant species observed within each habitat are recorded and habitats are classified and mapped. Note is also taken of the more conspicuous fauna present during the survey, with particular attention paid to any evidence of, or potential for, the presence of protected or notable species.

Bat Survey Methodology

3.6 Four bat activity surveys were undertaken at the site, comprising two back-to-back dawn and dusk surveys on 26/27 June 2008 and 08/09 July 2008, which are all within the optimal survey period for bat activity. All surveys were undertaken by Aidan Marsh MIEEM, Kris Long MIEEM and Luke Casey AIEEM. The surveys aim to record and quantify levels of bat activity to assess the potential that roosts,

[2] Nature Conservancy Council (1990) Handbook for Phase 1 habitat survey – a technique for environmental audit. JNCC, Peterborough.

foraging areas or regular flight lines occur within the site boundaries or in the immediate vicinity.

3.7 On each survey the three surveyors walked designated transect routes, which encircled the site and also included a leg through the centre, along Paxton Road (see Bat Survey Transect Route Plan CSA/1037/101 in Appendix C). Dusk surveys were undertaken from approximately half an hour before sunset until two hours after sunset. Dawn surveys commenced around two hours before sunrise and ended at sunrise.

3.8 Bat activity was picked up using frequency division bat detectors (Batbox Duet and Anabat SD1) in combination with visual observations. Bat echolocations were recorded onto digital mini-disc recorders for subsequent computer analysis using the software 'BatSound V.3.31'. Data recorded with the Anabat remote recording unit was analysed using the computer software 'AnalookW V.3.3f' Both software packages produce sonograms of bat echolocation calls from which features such as peak frequency and the duration of calls can usually be analysed and compared with known data to differentiate between species and confirm identifications made in the field.

Evaluation and Assessment

3.9 Ecological features are evaluated using the Guidelines for Ecological Impact Assessment 2006, produced by the Institute of Ecology and Environmental Management[3]. These guidelines promote a scientifically rigorous and transparent approach to the ecological assessment process. This methodology provides a standardised approach, formulated from the views of a wide spectrum of ecological professionals.

3.10 The process of valuing ecological features and resources is complex and subjective. The factors set out below need to be taken into account when applying professional judgement to value ecological features. Legal protection needs to be considered separately from value. Features that are important for social/community or economic reasons should be identified as part of the assessment and the impacts on these features should be assessed by the ecologist however the significance of the impacts will then be determined by the socio-economic/community specialist.

Geographic Frame of Reference

3.11 In assigning value to an ecological feature/resource the following geographic frame of reference should be used.

- International;
- UK;
- National (i.e. England/Northern Ireland/Scotland/Wales);

[3] IEEM (Institute of Ecology and Environmental Management). (2006). Guidelines for Ecological Impact Assessment (EcIA) – June 2006.

- Regional;
- County (or Metropolitan – e.g. in London);
- District (or Unitary Authority, City, or Borough);
- Local or Parish; and
- Within zone of influence only (which might be the project site or a larger area).

3.12 The size, conservation status and the quality of features or species are all relevant in determining value. Furthermore the value of a species and/or habitat may vary depending on its geographical location.

3.13 Some sites have already been assigned a level of nature conservation value through designation. For example:

- *Internationally important sites:*
  These include Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites. Sites for which the process of designation has commenced (e.g. potential SPAs, Ramsar sites and candidate SACs) should be given the same consideration as designated sites.
- *Nationally important sites:*
  These are designated as Sites of Special Scientific Interest (SSSI) in England, Scotland and Wales and as ASSI in Northern Ireland.
- *Sites of lower level importance e.g. Regional, county, district, parish:*
  Local Authority and County Wildlife Trust Sites and other organisations have non-statutory designated sites that are of importance at other levels. Such as County Wildlife Sites, Sites of Importance to Nature Conservation, Special Wildlife Sites, etc.

Tree Preservation Orders (TPOs)

3.14 TPOs are designated by the Local Planning Authority and are based on amenity related criteria. While this designation does not have any implications to their ecological value they should be considered due to the legal protection they offer.

Hedgerows Regulations

3.15 The Hedgerows Regulations 1997[4] provide for the protection of important hedgerows in England and Wales. To be 'important' a hedgerow must satisfy a number of specific criteria.

Biodiversity value

3.16 There are various characteristics that can be used to identify ecological resources or features likely to be important in terms of biodiversity. These include;

- Animal or plant species, subspecies or varieties that are rare or uncommon, either internationally, nationally or more locally;
- Ecosystems and their component parts, which provide the habitats required by the above species populations and/or assemblages;
- Endemic species or locally distinct sub-populations of a species;

- Habitat diversity, connectivity, and/or synergistic associations (e.g. networks of hedges and areas of species-poor pasture that might provide important feeding habitat for rare species such as greater horseshoe bat);
- Notably large populations of animals or concentrations of animals considered uncommon or threatened in a wider context;
- Plant communities (and their associated animals) that are considered to be typical of valued natural/semi-natural vegetation types – these will include examples of naturally species-poor communities;
- Species on the edge of their distribution, particularly where that distribution is changing as a result of global trends and climate change;
- Species-rich assemblages of plants or animals; and
- Typical faunal assemblages that are characteristic of homogenous habitats.

3.17 Several published approaches to the assessment of importance and value are available and have informed this approach. These include the Countryside Agency Quality (2001)[5], Treweek (1999)[6] and Collis and Tyldesley (1993)[7].

Valuing habitats

3.18 The value of areas of habitat and plant communities should be measured against published selection criteria where available. For example, the Habitats Directive 1992 lists habitats and plant communities of European importance whose conservation requires the designation of SACs; Local Authorities and Wildlife Trusts have generally prepared criteria for the selection of SINCs, and so forth. Where areas of a habitat or plant communities do not meet the necessary criteria for designation at a specific level, the local context may be considered if appropriate, and this should take into account potential value.

3.19 Habitat Action Plans (HAPs) should be considered, as their purpose is to guide conservation action for the habitats concerned.

3.20 Ancient woodlands may be designated at different levels and may be considered important even if not designated. Very mature habitats such as this cannot be readily restored or created.

Valuing species

3.21 The valuation of populations should make use of any relevant published evaluation criteria. For example, there are established criteria for defining nationally and internationally important populations of waterfowl.

3.22 Some species need to be assessed because they are of biodiversity value and/or because a proposal may lead to the contravention of the law. In assigning a level of value to a species, it is necessary to consider its distribution and status, including a consideration of trends based on available historical records.

[4] HMSO (1997) *The Hedgerow Regulations 1997* – Statutory Instrument 1997 No. 1160.
[5] Countryside Agency et al. (2001) Overview report – Quality of Life Capital. CAG and LUC, London
[6] Treweek J (1999) Ecological Impact Assessment. Blackwell Science, Oxford
[7] Collis and Tyldesley (1993) Natural Assets: Non-statutory Sites of Importance for Nature Conservation, The Local Government Nature Conservation Initiative

3.23 Rarity is an important consideration because of its relationship with threat and vulnerability. Some species are inherently rare, so it is necessary to look at rarity in the context of status. A species that is rare and declining should be assigned a higher level of importance than one that is rare but known to be stable. There are many species in decline throughout the UK, many of those for which the decline is more serious are the subjects of Species Action Plans (SAPs).

3.24 Other rarity-related evaluation criteria include the need to protect populations where the UK holds a large or significant proportion of an international species, e.g. a European population. Guidance is available for a number of species groups, which explain how to identify populations of a sufficient size for them to be of national or international importance e.g. dragonflies in the Guidelines for the selection of SSSIs. The need to protect populations where the UK holds a large or significant proportion of an international species is highly important and the evaluation of such populations should reflect this.

3.25 Species Action Plans (SAPs) should be considered as they are developed to guide conservation action for the species concerned.

3.26 Species and Habitats listed in UK BAPs have statutory protection through Section 74 of the Countryside and Rights of Way (CROW) Act 2000 in England and Wales. The Section 74 list of habitats and species are those the Secretary of State, following consultation with English Nature, considers are of principal importance for the conservation of biological diversity in England[8], in accordance with the 1992 UN Convention on Biological Diversity[9].

3.27 Some species must be controlled, mainly for public health and commercial reasons, and are legally identified as notifiable weeds under the Weeds Act 1959, or are controlled by the Wildlife and Countryside Act 1981. The Weeds Act 1959 and The Ragwort Control Act 2003 includes five weed species which may be injurious. Although the presence of such weeds may have various dis-benefits they may also have some ecological value. The legal consequences of their presence need to be considered and the ecological impacts assessed in this context.

Potential value

3.28 The Habitats Directive 1992 requires Member States to restore European designated sites where they are not of favourable conservation status. The value of such an area must be assessed in relation to the ecological feasibility of restoring it to favourable conservation status, or of enabling another area to be restored. This means that, even a habitat in poor condition may be considered to be of considerable importance, if there is a reasonable chance that it can be restored to a higher value in the future. It should also be noted that potential value is also addressed in some BAPs.

[8] Section 74 List of habitats and species important to biodiversity in England. www.defra.gov.uk/wildlife-countryside/cl/habitats/minstatement.htm
[9] Convention on Biological Diversity. www.biodiv.org/convention/articles.asp

Secondary or supporting value

3.29 Some features have no obvious value in themselves but perform an important ecological function e.g. acting as a buffer to important habitats. Therefore the importance of a feature may depend on its role within a wider system, as well as the extent to which this role may be assumed by another feature.

Social/community value

3.30 People derive benefits from biodiversity in various ways including recreational enjoyment and environmental education. Therefore the social value of the site/species should be considered.

Economic value

3.31 Impacts to certain ecological features and resources may have economic implications. Examples of such features/resources include populations of shellfish, fishing lakes and sites for rare breeding birds where tourism/recreation is important. Where such features/resources are to be affected, the likely ecological changes should be described and expert advice sought from an economist on the economic value.

Legal issues

3.32 It is important to identify ecological resources/features that are subject to specific legislation e.g. Statutory Wildlife Sites, protected species. In all cases legal and other guidance should be followed to determine whether a proposal will cause any contravention of legal status or protection, or have a significant effect on the integrity of a system, resource or feature.

3.33 The legal protection of some features/resources does not necessarily reflect their biodiversity value. For example, badgers under the Protection of Badgers Act 1992, trees protected under TPOs and species legally identified as notifiable weeds. Legal provisions/consequences need to be considered but the biodiversity value should be assessed as described previously.

Multi-functional features

3.34 Some features may have ecological, social and/or economic value and therefore the impact on all aspects should be assessed separately before an integrated appraisal is carried out.

Summary

3.35 The IEEM (2006) guidelines have been developed to promote a more scientifically thorough and clear approach to ecological evaluation and EcIA. The process of valuing ecological features and resources is complex and subjective and the approach set out above requires careful consideration of a range of factors and the use of professional judgement. Whilst values may still be summarised for convenience in terms of a geographical framework, e.g. county value, parish value etc, it is important that the rationale behind this final evaluation is carefully considered.

4.0 Ecological Context and Site Description

Designated Wildlife Sites

4.1 The results of the desktop biological records searches are provided within Appendices A and B. This includes plans highlighting statutorily and non-statutorily designated wildlife sites identified within the data search area, as well as records of protected species.

Statutorily Designated Sites

4.2 Two internationally important statutorily protected wildlife sites occur within 5km of the site, which are summarised below, including an approximate distance from the development.

- Walthamstow Reservoirs SSSI and Lee Valley SPA & Ramsar Site – 1.2km southeast
  Walthamstow Reservoirs Site of Special Scientific Interest (SSSI) contains a large concentration of breeding wildfowl and in winter attracts nationally significant populations of wildfowl and other wetland birds. The SSSI is a component unit of Lee Valley, designated as a Special Protection Area (SPA) and Ramsar wetland site, encompassing a series of wetlands and reservoirs along approximately 20km of the river valley. The site qualifies for SPA status by supporting populations of European importance of bittern *Botaurus stellaris*, Gadwall *Anas strepera* and shoveler *Anas clypeata*. The latter two of these populations also qualify the site as a Ramsar wetland of international importance. This site is of ecological value at the International level.

- *Epping Forest SSSI and SAC – 4.6km east*
  Epping Forest is primarily designated as a Special Area of Conservation (SAC) because it contains Atlantic acidophilous beech forests, which are an important habitat type in need of conservation at a European level. A second primary reason for SAC designation is the significant number of stag beetle *Lucanus cervus*, with widespread and frequent records. The site also contains ecologically valuable wet and dry heathland habitats. The Forest is designated as a SSSI because it is one of only a few remaining large-scale examples of ancient wood-pasture in lowland Britain with a range of high quality wildlife habitats. This site is of ecological value at the International level.

4.3 No additional nationally designated statutory wildlife sites occur within 2km of the development.

Non-statutorily Designated Sites

4.4 The desk-based information search provided by GIGL highlights the presence of several non-statutory Sites of Importance for Nature Conservation (SINCs) located within the data search area. These sites are identified by the Greater London Authority on account of their flora and fauna and are graded on the basis of their importance to a particular defined geographic area in the following order of importance:

Metropolitan ➔ Borough Grade I ➔ Borough Grade II ➔ Local

4.5 The SINCs within 1km, as listed below, are considered to be of ecological value at the Local or Borough level as per their grading, which has been made in accordance with published evaluation criteria (see Appendix B):

- *Tottenham Cemetery, All Hallows Churchyard and Bruce Castle Park – 0.37km west*
  This Borough Grade II site is an area of open parkland with veteran oak trees, also containing a pond and stream.

- *Tottenham Hale to Northumberland Park Railsides – 0.75km east*
  A Borough Grade II site comprising linear vegetated habitat alongside the railway. Habitats are dominated by rough grassland and scrub with scattered trees, which may function as a valuable wildlife movement corridor.

- *Marsh Lane Allotments – 0.88km east*
  A site of Local importance, comprising very well-used allotments with scattered fruit trees and climbers providing a resource for wildlife.

- *Bruce Grove Wood – 0.91km south*
  A small site of Local importance with a range of habitats including overgrown allotments, secondary woodland and mature planted trees.

- *Tottenham Marshes – 0.93km southeast*
  This Borough Grade I site consists of a large expanse of rough grassland with damp areas, a brook, and smaller areas of scrub and tall herbs supporting a diverse flora, of value for wildlife including birds and invertebrates.

- *Pymmes Park – 0.98km north*
  A site of Local importance designated for its large lake which has a reasonable marginal flora and a good range of common breeding wildfowl.

Site Description

Habitats/Flora

4.6 The majority of land within the survey area is dense urban development comprising numerous buildings surrounded by hardstanding. To the south of Paxton Road, which bisects the site, are the existing football stadium and a range of commercial and residential properties. To the north of Paxton Road are a range of light industrial buildings within the Wingate, Gibson Place and Northumberland Park trading estates, and additional residential and commercial properties. There is very little vegetation at the site, limited to areas of grassland within small gardens, very small areas of tall ruderals and a few scattered mature trees. Habitats are described below and illustrated on the Habitats Plan (CSA/1037/100) included in Appendix D.

Buildings and hardstanding

4.7 The vast majority of the site comprises buildings and hardstanding. The southern area of the site is dominated by the football stadium and associated car park. The central area of the site, immediately to the north of Paxton Road comprises a large hard-surfaced car park. Large buildings in light industrial use dominate approximately the northern half of the site. A range of buildings occur along Tottenham High Road in the west of the site, including shops, pubs, offices and dwellings. In the northeast of the site is a terrace of red brick houses along Worcester Avenue.

Amenity grassland

4.8 Gardens containing amenity grassland lawns occur to the rear of several properties that have frontages along Tottenham High Road and Worcester Avenue. Whilst individual gardens were not accessed, views from adjacent land indicate that the majority are closely mown and have the appearance of typical seed sown lawns. None of the grassland is of natural or semi-natural origin and no neglected areas with rank grassland were observed.

Tall ruderal and colonising vegetation

4.9 A few small patches of tall ruderal dominated vegetation occur at the site, generally dominated by common nettle *Urtica dioica*, or Japanese knotweed *Fallopia japonica*. A range of additional tall ruderals and other plant species are sparsely distributed across the site, typically growing at the edges of hardstanding areas. Species recorded in such locations include broadleaved dock *Rumex obtusifolius*, ragwort *Senecio* sp., creeping thistle, prickly lettuce *Lactuca serriola,* ivy-leaved toadflax *Cymbalaria muralis,* annual meadow-grass *Poa annua*, wall barley and barren brome *Anisantha sterilis*.

Trees

4.10 A small number of scattered mature trees occur across the site. To the north of Paxton Road trees include several false-acacia *Robinia pseudoacacia* and beech *Fagus sylvatica* associated with Northumberland Park in the northeast of the site and a horse chestnut *Aesculus hippocastanum* within Gibson Place in the northwest. To the south of Paxton Road are several pavement trees along the western, southern and eastern boundaries, including London Plane *Platanus* x *hispanica*, cherry *Prunus* sp., sycamore *Acer pseudoplatanus* and horse chestnut.

Fauna

Bats

4.11 Several local bat records collated by the London Bat Group have been provided by GiGL for the data search area (see Appendix B). These include a single record of a roost, of pipistrelle *Pipistrellus* sp. bats, from 442m west of the centre of the development site. Sightings of pipistrelle are recorded from 313m west, 1059m northeast and 1422m southeast of the site. The latter of these locations to the southeast also has records of serotine *Eptesicus serotinus* and noctule *Nyctalus noctula* bats, and it is assumed that this corresponds with habitat along the River Lee corridor, which is likely to be valuable for bat foraging.

4.12 The site contains very little vegetation and opportunities for bat foraging are considered to be very low. Whilst this reduces the likelihood that bats roost at the site, it is possible for bats to roost some distance from their foraging habitat. A brief assessment of the potential for the buildings at the site to support bat roosts was undertaken alongside the Phase 1 survey. The buildings that were considered to offer significant potential for bat roosting are shown on the Bat Survey Transect Route Plan (CSA/1037/101) within Appendix C. These largely correspond with the older brick built buildings at the site, particularly those which appear to contain roof voids. Many of the buildings considered to have no significant bat roosting potential are the industrial structures.

4.13 All of the mature trees at the site are along or adjacent to roads/pavements, or within carparks, and as a result they are managed closely, with little deadwood. There are a few exceptions such as two false-acacia in the northeast of the site that exhibit some cracks and splits that could potentially be exploited by roosting bats.

4.14 In order to explore the potential for bat roosts to occur at the site several bat activity surveys were undertaken during the optimal bat survey period (May-August). Surveyors walked transects around the boundaries of the site, which largely coincide with those buildings and trees considered to have greatest bat potential. The survey aimed to identify levels and patterns of bat activity around the site in order to assess the likelihood that bat roosts may occur. The results of the bat activity surveys are provided within Appendix E and are summarised below.

4.15 The bat activity surveys recorded very low levels of bat activity at the site. The first dusk survey on 26 June 2008 recorded a single noctule bat, commuting past the north of the site. On the following dawn survey foraging by common pipistrelle bats was recorded, with three encounters with bats foraging mainly over off-site trees and gardens adjacent to the southeast corner of the site. Three noctule bats were seen between 04.14 - 04.18, which appeared to be commuting from the east of the site to a location to the northwest.

4.16 The level of bat activity was higher on the surveys on 08/09 July 2008, although still considered low. Several noctule bats were detected during both surveys, several of which were seen flying high near the northern site boundary. These bats were probably flying from roosts to the north or west of the site to foraging areas to the south or east. A single noctule was sighted on the dusk survey commuting south along the eastern edge of the stadium. On the dawn survey two noctule flew south past the western edge of the stadium and two were recorded flying back in the opposite direction 15 minutes later, which would be consistent with a roost occurring somewhere to the north or west of the site. There were no extended contacts with noctule, suggesting that the site is not of foraging value for this species. Common pipistrelle bats were also encountered on both surveys. The majority of contacts with this species were brief, although a bat foraged for

around 5 minutes over habitats immediately to the southeast of the site from 21.49-21.54 on the dusk survey.

4.17 Overall, the survey work recorded very low levels of bat activity at the site, limited to a small number of passes by noctule bats. Several additional noctule passes and very low levels of common pipistrelle foraging were detected from land adjacent to the site boundary. At no point during any of the four surveys was any behaviour observed to suggest that bats roost at the site or use it for any significant foraging.

Other notable mammals

4.18 The UK and London BAP Priority species of hedgehog *Erinaceus europaeus* has been recorded locally, with the closest record originating from 512m southwest of the centre of the site. The very small areas of garden present at the site are unlikely to be of any significant value to this species. The NBN Gateway search returned records of badger *Meles meles,* otter *Lutra lutra* and water vole *Arvicola terrestris* from the 10km grid square that contains the site. No opportunities for these protected mammal species are considered to occur at the site.

Birds

4.19 GiGL have provided a number of records of protected and notable bird species for the data search area. These include species specially protected under Schedule 1 of the Wildlife and Countryside Act 1981 such as hobby *Falco subbuteo*, kingfisher *Alcedo atthis*, black redstart *Phoenicuris ochruros*, fieldfare *Turdus pilaris* and redwing *Turdus iliacus*.

4.20 The highly urbanised nature of the site reduces its value to bird species, and no habitats are present that would typically support any of the Schedule 1 species listed above. Black redstart are known to breed within the Lee Valley around 1.2km southeast of the site but GiGL have confirmed that that the development site does not fall within a 'known key area' for this species. Black redstart is typically associated with sparsely vegetated brownfield land with areas of stony ground, often close to water. Such habitats do not occur on the site so opportunities for this species are considered to be negligible.

4.21 The small proportion of the site comprising trees and residential gardens is likely to be used by bird species commonly associated with urban gardens. These may include house sparrow *Passer domesticus* and starling *Sturnus vulgaris,* which are both listed within the London and UK BAP due to recent dramatic population declines. Several of the buildings at the site could be used for nesting by these species and a range of other common birds. This includes kestrel *Falco tinnunculus*, for which there are anecdotal reports of nesting from within the football stadium.

Reptiles

4.22 The NBN Gateway search returned records of the four widespread British reptile species (slow-worm *Anguis fragilis*, common lizard *Lacerta vivipara*, grass snake *Natrix natrix* and adder *Vipera berus*) from the 10km grid square that contains the

site. The habitats present within the site are not considered to be suitable for reptile species.

Amphibians

4.23 A record of common toad *Bufo bufo,* a UK and London BAP Priority species, have been provided by GiGL for a location 1327m northwest of the centre of the site. Records of common frog *Rana temporaria* and smooth newt *Triturus vulgaris* also occur within the data search area, all from over 500m from the site centre. The NBN Gateway search returned records great crested newt *Triturus cristatus* from the 10km grid square that contains the site. No waterbodies or suitable terrestrial habitats that could potentially support populations of amphibians occur at the site.

Invertebrates

4.24 Several records of two London and National BAP moth species; blood-vein *Timandra comae* and cinnabar *Tyria jacobaeae*, originate from 1282m southeast of the centre of the site. The larval foodplants of these species, such as docks and ragwort do not occur at the site in any significant quantity and opportunities for notable invertebrate species are considered to be negligible.

Evaluation of Ecological Features

4.25 With reference to the evaluation criteria set out in the methodology, a range of factors has to be considered when evaluating a site's features. A checklist of potentially relevant factors, as set out in the IEEM evaluation guidelines, is shown in Table 1. The features of this site are considered against each of these factors.

Factors	**Status**	**Notes**
Designated Sites and Features • Internationally important sites	Absent	No internationally important sites cover the proposed development site. Lee Valley SPA & Epping Forest SAC occur within 5km.
• Nationally important sites	Absent	No statutory sites cover the proposed development site. Walthamstow Reservoirs SSSI occurs at 1.2km.
• Sites of lower level importance	Absent	No non-statutory wildlife sites cover the site. Six SINCs occur within 1km.
Tree Preservation Orders	Present	Several of the mature trees within the north of the site are understood to be covered by TPOs.
Hedgerow Regulations	Absent	-
Biodiversity Value • Habitat designations	Absent	-
• Non designated habitats of value or potential value	Absent	-
• HAPs	Present	There is a HAP for Built Structures within the London BAP and a HAP for Private Gardens within the London and Haringey BAPs.
• Ancient Woodland	Absent	-
• Protected species	Potentially present	Nesting birds are likely to occur at the site.

• Rare species	Absent	-
• Species records	Absent	None for the site, although a range of records have been provided from within 1.5km.
• SAP species	Potentially present	The UK and London BAP has SAPs for house sparrow, starling and song thrush.
Large populations/important assemblages of species	Absent	-
Injurious and legally controlled weeds	Present	Japanese knotweed has been identified at the site
Potential Value	Absent	-
Secondary or supporting value	Absent	-
Social/community value	Absent	-
Economic value	Absent	-
Legal issues	Present	Protected species issues are discussed herein.
Multi-functional features	Absent	-

4.26 The scale of value of the several potential ecological features at the site has been considered to determine their significance, as follows. Any ecological feature of value at the Local scale or above is considered to be a Valued Ecological Receptor (VER).

- *Bats* - At no point during any of the four surveys was any behaviour observed to suggest that bats roost at the site, use it for significant foraging or rely upon any specific feature as a flight line. Bats are not therefore considered to represent a VER.

- *Nesting birds* - The highly urbanised nature of the site reduces its value to bird species, and no habitats are identified that would typically support any notable species. Trees and buildings at the site are likely to be used for nesting by common bird species, including kestrel that is reported to nest within the stadium. Nesting by common bird species is considered to be of ecological value at the site/ immediate zone of influence level only.

- *Mature trees* – A small number of scattered mature trees occur across the site. The majority of these are non-native street trees planted in disturbed locations along roads. Whilst they offer some opportunities for wildlife at the site and within the immediate zone of influence, these trees are not considered to be of significant ecological value at any greater level.

- *Wildlife sites* – All statutory and non-statutory wildlife sites are notified for ecological value at the Local level or above. All of the wildlife sites discussed in sections 4.1 - 4.5 qualify as VERs, with the scale of value ranging from Local - International according to the site designations, which follow published evaluation criteria.

5.0 Discussion and Recommendations

Potential Impacts and Mitigation

Impacts on wildlife sites

5.1 Walthamstow Reservoirs is the only unit of Lee Valley SPA within 10km, at approximately 1.2km. Consultation with Natural England confirms that the SSSI is only notified for one of the bird species that the SPA is designated for, namely a nationally significant number of overwintering shoveler. Several additional wetland bird species also occur at nationally significant numbers, and gadwall occur in smaller numbers. Given the distance from the development, no construction effects are predicted to the SPA/SSSI and no significant operational effects are predicted, as discussed below.

5.2 The reservoirs within the SSSI are owned and managed by Thames Water with public access by permit only. The wetland bird populations using the site are not particularly vulnerable to disturbance from the current use of the site by anglers and birdwatchers. Any increase in visitor numbers from new residents of the development is predicted to be minor and unlikely to have a significant effect on shoveler, gadwall or any other wildfowl species at the SPA/SSSI.

5.3 The Lee Valley forms a wetland corridor through the densely urbanised northern areas of Greater London, which has a roughly north-south orientation and is likely to provide a topographical feature for bird migration. Shoveler, gadwall and other wildfowl migrate to Walthamstow Reservoirs SSSI from summer breeding grounds in northern and eastern Europe. The development site occurs over 1km to the northwest of the SSSI and river corridor in a densely developed area. It is considered highly unlikely that the construction of tall buildings and the use of artificial light sources at the development site would have any significant effect on the migratory routes of bird species using the SPA. In summary, no effects to the integrity of the SPA/SSSI are predicted as a result of this development.

5.4 Epping Forest SAC/SSSI is primarily notified for its woodland habitat types and population of stag beetle, although it also contains smaller areas of internationally important heathland habitats. The SAC/SSSI is approximately 4.6km from the proposed development at its closest point, and is a large linear site extending over 12km in length. At this distance, no construction impacts are predicted and the increase in visitor numbers to the SAC/SSSI contributed by residents of the new development is considered to be negligible. No significant effects to the habitats or species that the SAC/SSSI is designated for are predicted as a result of this development.

Non-statutorily Designated Sites

5.5 No non-statutory wildlife sites cover the development site or occur on adjacent land and no impacts from the construction phase are predicted.

5.6 The development is likely to increase visitor numbers to the closest SINC of Tottenham Cemetery, All Hallows Churchyard and Bruce Castle Park. This site

comprises open parkland that is reportedly visited by over 100,000 people per year. With this number of visitors the SINC is not considered to contain any wildlife habitats or species that are particularly sensitive to disturbance and the potential minor increase in recreational use from the new development is considered to have a negligible effect on the ecological value of the site.

5.7 Tottenham Marshes SINC and Pymmes Park SINC are also accessible to the public. Both sites occur over 0.9km from the development site and have existing management to provide access for significant numbers of visitors. No effects to the ecological value of these SINCs are predicted from the development.

5.8 There is no public access to the Tottenham Hale to Northumberland Park Railsides SINC, Marsh Lane Allotments SINC and Bruce Grove Wood SINC and no effects from the development are likely.

Habitats/Flora

5.9 The Phase 1 survey has revealed that the vast majority of the site comprises buildings and hardstanding, with very limited areas of habitat present. Habitats include short mown lawns, garden shrubs and small patches of tall ruderal, none of which have significant ecological value.

5.10 The scattered mature trees at the site do not qualify as a VER, however, they do provide opportunities for local wildlife and they represent a declining resource that cannot be readily replaced. It is therefore recommended that mature trees be retained alongside the new development wherever possible. Retained trees and their root systems should be protected from damage throughout the development in accordance with guidance provided by British Standard 5837:2005 'Trees in Relation to Construction'. If felling of mature trees is necessary to facilitate development it is recommended that a greater number of native trees be incorporated within the new scheme as a compensatory measure.

Bats

5.11 The site contains numerous buildings, the majority of which are large industrial units that are not considered to have significant potential for bats. There are several buildings and a small number of trees with physical features that exhibit some potential to support bat roosts. However, the heavily urbanised nature of the site results in a lack of suitable foraging habitat and high light levels, which significantly reduces the likelihood that a roost occurs.

5.12 The bat activity survey work utilised transects around the boundary, and through the centre of the site, in order to "box in" the site and allow bat movements in or out of the site to be picked up. No evidence was seen to suggest that any roosts occur and activity levels recorded were so low that the entire site appears to be of negligible interest to bats. Surveyors did not continually watch individual buildings or trees for emerging or returning bats, however it is considered that the findings of the activity surveys are sufficient to conclude that a bat roost is unlikely to occur at the site. No further bat survey work is therefore considered to be necessary.

5.13 Noctule bats were recorded commuting past the site, generally flying in the open, high above buildings. From the general direction that bats were seen flying there is likely to be a roost to the north or west of the site, which could potentially be several kilometres away. The noctule bats observed did not appear to be following regular flight lines across the site, although the single noctule sighted flying along the edge of the stadium may have been exploiting the relatively dark conditions in this location. The replacement of the current stadium and associated development could result in increased artificial light levels at the site. This may alter the routes that individual bats adopt, particularly when the stadium is in use. However, the effect on the noctule population is not considered to be significant as these bats are adaptable in their choice of commuting route and are clearly tolerant of the significant artificial light levels that occur throughout the urban areas surrounding the site.

Nesting birds

5.14 Buildings and vegetation at the site are used for nesting by bird species, including kestrels within the stadium itself. All wild birds, their nests and eggs are protected under subsection 1(1) of the Wildlife and Countryside Act 1981. It is an offence to kill or injure any wild bird, to take or destroy their eggs, or to take, damage or destroy their nests while in use or being built.

5.15 The existing stadium is scheduled for demolition between May-August 2012, at the end of the football season, but during a period when birds may be nesting within the stadium. It is recommended that measures be taken to minimise the potential for active birds nests to be present at this time, to be informed by bird survey work to be undertaken in March – June 2011.

5.16 Bird survey work would record the location/s within the stadium used by kestrel for nesting and also locations used for breeding by other bird species. At the end of the breeding season in 2011, once all of the nestlings have fledged, the nest locations and any other obvious nesting opportunities would be made unsuitable for use the following year. This would be achieved through the implementation of various bird proofing measures as appropriate, such as netting over features to prevent access and the use of non-harmful spikes to deter perching and nesting.

5.17 It is recommended that several kestrel nest boxes be erected at the site, if possible within the stands of the new stadium prior to demolition of the old stadium, to provide continuous opportunities for kestrel to nest at the site.

Non-native invasive species

5.18 A small quantity of Japanese knotweed occurs in the northwest of the site, which is an invasive non-native plant, capable of growing through hard surfaces such as tarmac and concrete. The species is listed on Schedule 9 and subject to section 14 of the Wildlife and Countryside Act 1981, which makes it an offence to plant, or cause this species to grow, in the wild. Failure to address this issue could result in spreading the plant both throughout the site during construction and off-site within contaminated material, which could cause significant future structural damage and would represent an offence under the Act.

5.19 It is recommended that the small patch of Japanese knotweed be cleared prior to demolition of buildings or any other development works within the Gibson Place industrial area of the site. A specialist contractor should be commissioned to eradicate the plant and dispose of any contaminated material by an appropriate method to ensure that legal obligations are met and that no fragments of material remain to allow the plant to regenerate.

Ecological Enhancement

5.20 The provision of new habitats and/or features for wildlife could provide biodiversity gains, in line with guidance within PPS9, London Plan Policy 3D.14, Haringey UDP policies OS11 and UD2, and draft SPG 8d.

5.21 The residential and hotel development in the south of the site will create numerous roof and terrace areas that will contain a mosaic of different green/brown roof types to offer a significant biodiversity enhancement, as shown on the South Building Green Roof Plan (Drawing No. L1011). This includes significant areas of extensive biodiverse/brown roof comprising varying depths of a range of substrates, such as shingle, crushed aggregate, soils and sandy gravel. The majority of these areas will be allowed to colonise naturally from local seed sources. Extensive green roofs will also be provided on areas that are overlooked by new residents. These will have a substrate base and will be planted with sedums and a range of native wildflower plugs. A range of public and semi-public terraces and roof gardens will also be created with small multi-stemmed trees and raised planters to include native species.

5.22 An extensive green screen will be constructed to screen the western end of the commercial development in the north of the site. This will be planted with a number of different climbing plant species, including some native species (e.g. ivy) and other flowering species. As these plants develop and cover the screen they will provide new habitat for invertebrates, and therefore also provide a potential feeding resource for local birds and possibly bats. A total of ten bird boxes will be associated with the green screen, targeting a range of small common bird species such as house sparrow and tit species.

5.23 New tree and shrub planting will be included within the landscape scheme for the site. The nature of this development mean that high levels of pedestrian traffic and the demands of CCTV coverage impose constraints on the extent and type of planting that can be provided. However, the planting of native species of local provenance and other shrub species of known benefit to wildlife will be provided where possible. These could include nectar-rich species to attract invertebrates and fruit bearing species to provide food for birds.

5.24 There are reports of kestrel using the existing stadium at the site, and replacement nesting opportunities will be provided. Two new kestrel nest boxes will be provided in appropriate locations on new buildings at the site, to be informed by the bird survey work to be undertaken in spring 2011. If possible these should be provided within the stands of the new stadium in sheltered

locations similar to the existing nest sites. Additional bird boxes could also be provided to offer new potential nesting sites, with a wide range of suitable products available for buildings such as sparrow terraces and swift boxes. The final selection of boxes should take into account the species recorded from the proposed nesting bird survey.

5.25 The results of the bat surveys suggest that the site is of no real significance to bats, and siting bat boxes across the majority of the new development is unlikely to be successful at attracting bats. However, sporadic common pipistrelle foraging was recorded around trees in the southeast corner of the site. New tree planting is proposed for this area and so bat boxes located in this corner may have the greatest chance of being occupied. Therefore, four bat boxes will be fixed in appropriate locations along the eastern wall of the residential block close to the junction of Worcester Avenue and Park Lane.

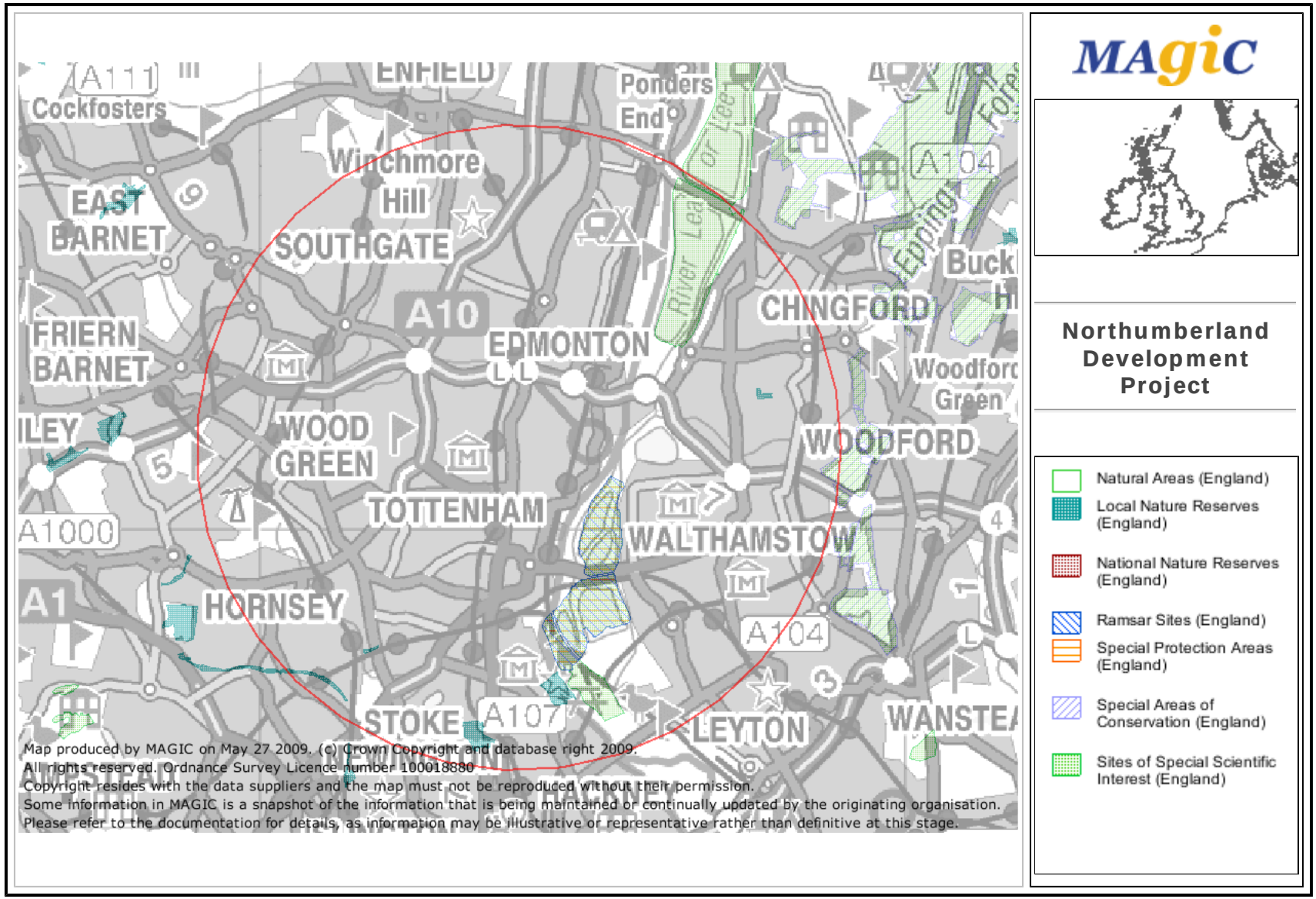
6.0 Conclusion

6.1 The majority of this site comprises buildings and hardstanding of no significant ecological value. No species or habitats of significant ecological value are considered to be present at the site. The potential for impacts to local wildlife sites, including Lee Valley SPA, have been considered and no potentially significant effects are predicted from the development. Legal issues concerning nesting birds and Japanese knotweed have been identified and appropriate recommendations made. Potential ecological enhancement measures have also been discussed.

6.2 It is anticipated that the redevelopment of this site may proceed without any significant adverse ecological impacts.

APPENDIX A

MAGIC Database Site Check Report and Plan


MAGiC
Northumberland Development Project
Natural Areas (England)
Local Nature Reserves (England)
National Nature Reserves (England)
Ramsar Sites (England)
Special Protection Areas (England)
Special Areas of Conservation (England)
Sites of Special Scientific Interest (England)
Cockfosters
ENFIELD
Ponders End
Winchmore Hill
EAST BARNET
SOUTHGATE
A10
EDMONTON
CHINGFORD
FRIERN BARNET
WOOD GREEN
TOTTENHAM
WOODFORD
WALTHAMSTOW
HORNSEY
A1000
A1
A104
A107
STOKE
LEYTON
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Please refer to the documentation for details, as information may be illustrative or representative rather than definitive at this stage.

Site Check Report

Report generated on May 27 2009.

You clicked on the point:
Grid Ref: TQ 340 912
Full Grid Ref: 534014 , 191277

The following features have been found within 5,000 metres of your search point:

Counties, Metropolitan Districts and Unitary Authorities (GB)

Geographic Level	Name
GREATER LONDON AUTHORITY	GREATER LONDON

NUTS1 - Government Office Regions (GB)

Hotlink	Name	Reference
http://www.statistics.gov.uk/geography/nuts_lon.asp	LONDON	UKI

Natural Areas (England)

Hotlink	Name	Reference
http://www.naturalareas.naturalengland.org.uk/science/natural/na_details.asp?na_id=66&s=&r=6	LONDON BASIN	66

Local Nature Reserves (England)

Name	Reference
PARKLAND WALK	1009064
SPRINGFIELD PARK	1009350
AINSLIE WOOD	1009359
ABNEY PARK CEMETERY	1008740
RAILWAY FIELDS	1009092

National Nature Reserves (England)

There are no features within your search area.

Ramsar Sites (England)

Name	Reference
LEE VALLEY	UK11034

Special Protection Areas (England)

Name	Reference
LEE VALLEY	UK9012111

Special Areas of Conservation (England)

Name	Reference
EPPING FOREST	UK0012720

Sites of Special Scientific Interest (England)

Citation	Name	Reference
1004304	WALTHAMSTOW RESERVOIRS	1000135
1001814	EPPING FOREST	1001669
1001912	CHINGFORD RESERVOIRS	1000382

1003054 WALTHAMSTOW MARSHES 1000343

To save the report, select "Save" or "Save As" from the File menu. You should save the file with a **.html** extension and give it a name of your choice.
You can then open your report using your web browser software.

Print Report | Close Window

APPENDIX B

Biological Data Search Responses from
Greenspace Information for Greater London (GiGL)

GiGL

Greenspace Information for Greater London
the open space and biodiversity records centre

An Ecological Data Search for Haringey, North London

Produced by
Lauren Alexander
Senior Information Officer

Greenspace Information for Greater London
(GiGL)

01 May 08

On behalf of
CSa Environmental Planning

Report reference 08/176

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1.0 Introduction

An ecological data search for Haringey, North London and surrounding land on behalf of CSa Environmental Planning.

The following report was compiled by Greenspace Information for Greater London (GiGL) on behalf of CSa Environmental Planning, to provide ecological information for the above site for a planning application. This report may include information on statutory sites, non-statutory sites, species records, habitat or open space information held by GiGL, as requested for the above search area. The boundaries of this search area are defined in the maps in Annex A and lie within the London Borough(s) of Enfield, Haringey and Waltham Forest.

2.0 Non-Statutory Sites

A desk-based search shows that there are 9 SINCs and no LWT reserves within the search area.

2.1 Sites of Importance for Nature Conservation

Introduction

Sites of Importance for Nature Conservation (SINCs) are non-statutory and are identified by the Greater London Authority on account of their flora and fauna. They are of Greater London or regional importance. For further explanations of the designations and a list of the documents that most recently define the sites please see the "Supporting Information" annex.

The Sites of Importance for Nature Conservation have been identified since 1986 using procedures that have now been adopted by the Mayor of London. They are recommended for protection in planning. The boundaries and site grades reflect the most recent consideration of each site, details of which are available from the Greater London Authority. Note that boundaries and grades may change as new information becomes available.

Citations

Citations currently available for SINCs within the search area can be seen on the following pages.

Please note that the content of SINC citations is reviewed periodically and that species referred to in the citations may not be present on site today. Citations may have been written based on data not held by GiGL.

Site of Metropolitan Importance for Nature Conservation

Site Reference: M071

Site Name: Lea Valley

Summary: This sprawling series of open spaces, in the valley of the River Lea, includes lakes, reservoirs, marshes and wet grassland. The wonderfully diverse range of wetland habitats has made this area a haven for many rare plants and a tremendous range of birds.

Grid ref: TQ 354 906

Area (ha): 947.15

Borough(s):

Enfield, Hackney, Haringey, Newham, Tower Hamlets, Waltham Forest

Habitat(s):

Canal, Marsh/swamp, Pond/lake, Reed bed, Ruderal, Running water, Scrub, Secondary woodland, Semi-improved neutral grassland, Wet ditches, Wet grassland, Wet woodland/carr

Access: Free public access (part of site)

Ownership: Lee Valley Regional Park Authority, Thames Water, British Waterways, London Borough of Hackney

Site Description:

This large site includes the River Lee Navigation, River Lea and associated watercourses downstream to the tidal limit in Tower Hamlets; Rammey Marsh; King George V and William Girling Reservoirs; Walthamstow Marshes and Reservoirs; and the new Middlesex Filter Beds nature reserve. The river below the tidal limit is included in the River Thames and tidal tributaries Metropolitan Site.

The watercourses support a diverse aquatic flora including many regionally uncommon species; river water-dropwort (Oenanthe fluviatilis), tubular water-dropwort (O. fistulosa), whorl-grass (Catabrosa aquatica), arrowhead (Sagittaria sagittifolia), flowering-rush (Butomus umbellatus) and stream water-crowfoot (Ranunculus penicillatus). A population of the nationally rare and specially-protected creeping marshwort (Apium repens) has recently been discovered beside a ditch on Walthamstow Marshes; the second of only two sites remaining in the country. Brookweed (Samolus valerandi) and blunt-flowered rush (Juncus subnodulosus), both very rare in London, grow nearby. Wet marshy grassland supports marsh arrowgrass (Triglochin palustre), marsh-marigold (Caltha palustris), adder's-tongue fern (Ophioglossum vulgatum) and the hybrid sedge Carex x subgracilis. Drier neutral grassland supports bee orchid (Ophrys apifera), grass vetchling (Lathyrus nissolia) and the nationally scarce yellow vetchling (Lathyrus aphaca).

The site is immensely important for its avifauna; the valley holds internationally important numbers of wintering gadwall and shoveler. Breeding birds include kingfisher, little ringed plover, skylark and yellow wagtail; London's largest heronry is at Walthamstow Reservoirs. The Chingford and Walthamstow Reservoirs are a major refuge for national and regionally important numbers of waterfowl, including tufted duck, great crested grebe, goosander and goldeneye. Nationally rare wintering and passage species are regularly recorded.

The site is very important for the specially-protected water vole, which is locally abundant. The specially-protected great crested newt also occurs; fish include the declining bullhead. The reed beds and other riparian habitats support a nationally important assemblage of invertebrates. This includes several nationally scarce moths, such as the dotted fan-foot, Webb's wainscot and brown-veined wainscot. The red-eyed damselfly (Erythromma najas) which is scarce in London, also occurs.

Walthamstow Marshes; Chingford Reservoirs; and Walthamstow Reservoirs are Site of Special Scientific Interest and part of an Important Bird Area. Walthamstow Reservoirs are within the Lea Valley Special Protection Area (EU Birds Directive) and Ramsar Site. Walthamstow Marshes and Waterworks Nature Reserve won Green Flag Awards for 2006/7.

Site first notified: 19/09/1988 **Boundary last changed:** 01/05/2002

Citation last edited:	14/08/2006	**Mayor Agreed:**	25/11/2002
Defunct:	N		
Last Updated:	11/04/2007		

Site of Borough Grade I Importance for Nature Conservation

Site Reference: HgBI13

Site Name: Tottenham Marshes

Summary: A large expanse of rough grassland, popular with local people.

Grid ref: TQ 352 908

Area (ha): 31.42

Borough(s):

Haringey

Habitat(s):

Running water, Scattered trees, Scrub, Semi-improved neutral grassland, Tall herbs, Wet grassland

Access: Free public access (all/most of site)

Ownership: Lee Valley Regional Park Authority

Site Description:

A large expanse of rough grassland, some of it damp, with smaller areas of scrub and tall herbs. A very diverse flora includes the nationally scarce wall bedstraw (Galium parisiense) and yellow vetchling (Lathyrus aphaca), as well as several species which are uncommon in London, such as bee orchid (Ophrys apifera), grass vetchling (Lathyrus. nissolia), and Babington's poppy (Papaver dubium ssp lecoquii). Butterflies include a colony of brown argus, which is rare in Haringey. Skylarks breed here and short-eared owls are occasionally seen in winter. The Pymme's Brook runs through the site.
Tottenham Marshes have long been popular for leisure activities. On Bank Holiday Monday in 1877, 20,000 day trippers travelled to Bruce Grove Station to spend the day on the marshes and to go dancing at the Ferry Boat Inn in the evening. Tottenham Hotspur played here in the late 1800s, until they rented their first ground.

Site first notified: 01/04/1990 **Boundary last changed:** 06/10/1999

Citation last edited: 09/12/2005 **Mayor Agreed:**

Defunct: N

Last Updated: 27/03/2006

Site of Borough Grade II Importance for Nature Conservation

Site Reference: HgBII03

Site Name: Tottenham Cemetery, All Hallows Churchyard and Bruce Castle Park

Summary: A large park, and adjacent cemetery and churchyard, with some fine old trees.

Grid ref: TQ 332 909

Area (ha): 29.5

Borough(s):

Haringey

Habitat(s):

Amenity grassland, Planted shrubbery, Pond/lake, Running water, Scattered trees, Semi-improved neutral grassland, Veteran trees

Access: Free public access (all/most of site)

Ownership: London Borough of Haringey

Site Description:

This is a large area of open parkland, with some fine old oak trees in the park, churchyard and cemetery. The site attracts numerous migrant birds in spring and autumn. Small areas of grass are managed as meadow. The cemetery contains a large pond with two islands, which provide nest sites for common waterfowl, and a stream, the Moselle Brook, runs across the site. Bruce Castle Park won a Green Flag Award again for 2006/7.

Site first notified: 01/04/1990 **Boundary last changed:** 01/11/2002

Citation last edited: 24/07/2006 **Mayor Agreed:**

Defunct: N

Last Updated: 06/06/2007

Site of Borough Grade II Importance for Nature Conservation

Site Reference: HgBII15

Site Name: Tottenham Hale to Northumberland Park Railsides

Summary: A long stretch of vegetated railsides containing a good range of habitats.

Grid ref: TQ 347 905

Area (ha): 7.52

Borough(s):

Haringey

Habitat(s):

Roughland, Ruderal, Scattered trees, Secondary woodland

Access: Can be viewed from adjacent paths or roads only

Ownership: Network Rail

Site Description:

This long stretch of vegetated railsides contains a good range of habitats. Much of the site is a mosaic of rough grassland and scrub of bramble, sallows and buddleia, with a scattering of silver birch trees. There are some areas of more mature woodland, dominated by sycamore, and patches of tall herbs. The rare hybrid "Wurzell's wormwood" (Artemisia vulgaris x verlotiorum) is abundant around Northumberland Park station.

Site first notified: 01/11/2002 **Boundary last changed:** 01/11/2002

Citation last edited: 09/12/2005 **Mayor Agreed:**

Defunct: N

Last Updated: 01/02/2006

Site of Local Importance for Nature Conservation

Site Reference: EnL05

Site Name: Pymmes Park

Summary: A large park with a lake supporting a good range of water birds.

Grid ref: TQ 337 927

Area (ha): 20.48

Borough(s):

Enfield

Habitat(s):

Amenity grassland, Flower beds, Planted shrubbery, Pond/lake, Scattered trees

Access: Free public access (all/most of site)

Ownership: London Borough of Enfield

Site Description:

The main feature of wildlife interest in this popular park is the large lake. This has a fairly good marginal flora, including water figwort (Scrophularia auriculata), remote sedge (Carex remota) and gypsywort (Lycopus europaeus). A good range of common breeding wildfowl includes mallard, tufted duck, coot, moorhen, mute swan and Canada goose.
There is free public access in daylight hours. Pymmes Park won a Green Flag Award for 2006/7.
This site is not currently designated as a Site of Nature Conservation Importance in Enfield's Unitary Development Plan, and therefore has no special protection under the nature conservation policies in the plan.

Site first notified: 30/08/2000 **Boundary last changed:** 30/08/2000

Citation last edited: 11/04/2007 **Mayor Agreed:**

Defunct: N

Last Updated: 11/04/2007

Site of Local Importance for Nature Conservation

Site Reference: HgL19C

Site Name: Devonshire Hill Allotments

Summary: A large allotment site with a variety of wildlife habitats, including hedges and scrub.

Grid ref: TQ 328 916

Area (ha): 2.61

Borough(s):

Haringey

Habitat(s):

Allotments, Amenity grassland, Hedge, Roughland, Ruderal, Scattered trees, Semi-improved neutral grassland, Tall herbs

Access: No public access

Ownership: London Borough of Haringey

Site Description:

All allotments in Haringey have been identified as being of Local Importance for Nature Conservation. Allotments provide a valuable resource for wildlife, as well as giving contact with the natural world for allotment holders. They can support important populations of amphibians and reptiles, especially slow worms and grass snakes (grass snakes are known from at least two allotment sites in the north of the borough), as well as birds, mammals and invertebrates.
Devonshire Hill Allotments are large and contain a variety of wildlife habitats, including boundary hedges of pedunculate oak (Quercus robur), ornamental apple (Malus sp.) and hawthorn (Crataegus monogyna) and scattered unused plots with scrub and rough grassland or ruderal vegetation.
Access is restricted to keyholders.

Site first notified: 01/03/1998 **Boundary last changed:** 01/03/1998

Citation last edited: 21/03/2007 **Mayor Agreed:**

Defunct: N

Last Updated: 21/03/2007

Site of Local Importance for Nature Conservation

Site Reference: HgL19H

Site Name: Marsh Lane Allotments

Summary: Allotments with fruit trees and climbers providing a resource for wildlife, as well as contact with the natural world for allotment holders.

Grid ref: TQ 351 909

Area (ha): 1.78

Borough(s):

Haringey

Habitat(s):

Allotments, Scattered trees

Access: No public access

Ownership: London Borough of Haringey

Site Description:

All allotments in Haringey have been identified as being of Local Importance for Nature Conservation. Allotments provide a valuable resource for wildlife, as well as giving contact with the natural world for allotment holders. They can support important populations of amphibians and reptiles, especially slow worms and grass snakes (grass snakes are known from at least two allotment sites in the north of the borough), as well as birds, mammals and invertebrates.
Marsh Lane Allotments are very well-used. Scattered fruit trees and climbers along the fence provide wildlife habitat. Access is restricted to allotment holders.

Site first notified: 01/03/1998 **Boundary last changed:** 01/03/1998

Citation last edited: 20/02/2007 **Mayor Agreed:**

Defunct: N

Last Updated: 20/02/2007

Site of Local Importance for Nature Conservation

Site Reference: HgL20

Site Name: Tower Gardens

Summary: A small park with numerous mature trees and areas of native woodland and scrub planting.

Grid ref: TQ 328 906

Area (ha): 1.33

Borough(s):

Haringey

Habitat(s):

Amenity grassland, Scattered trees, Scrub, Secondary woodland

Access: No public access

Ownership: London Borough of Haringey

Site Description:

This small park contains several features of value to wildlife, including numerous mature trees and areas of native woodland and scrub planting. The trees are mostly towards the edges of the site, and include some fine large London planes (Platanus x hispanica) and common limes (Tilia x europaea). There is a dense stand of blackthorn (Prunus spinosa) scrub on the northern edge, and extensive shrubberies around much of the perimeter. These provide nest sites and food for a good range of common birds. Also on the northern edge is a sunny bank, covered in rough grassland and tall herbs, which is likely to support a good diversity of invertebrates.

Site first notified: 01/11/2002 **Boundary last changed:** 01/11/2002

Citation last edited: 20/02/2007 **Mayor Agreed:**

Defunct: N

Last Updated: 20/02/2007

Site of Local Importance for Nature Conservation

Site Reference: HgL22

Site Name: Bruce Grove Wood

Summary: A small site with a range of habitats, tucked away at the back of Bruce Grove School.

Grid ref: TQ 336 901

Area (ha): 0.78

Borough(s):

Haringey

Habitat(s):

Amenity grassland, Secondary woodland, Semi-improved neutral grassland, Veteran trees

Access: No public access

Ownership: London Borough of Haringey and private

Site Description:

Bruce Grove Wood is a remarkable site tucked away at the back of Bruce Grove School, but not easily seen from the surrounding roads. There are a range of habitats on the site, including overgrown allotments, mown grass, and secondary woodland of ash (Fraxinus excelsior) and sycamore (Acer pseudoplatanus). The woodland contains some venerable planted trees, including a very large beech (Fagus sylvatica). A planning agreement from a nearby redevelopment has provided funding for management of the site, to allow educational use by the school.

Site first notified: 01/03/1998 **Boundary last changed:** 01/03/1998

Citation last edited: 21/03/2007 **Mayor Agreed:**

Defunct: N

Last Updated: 21/03/2007

3.0 Species

A list of protected species* and those that are National or London Biodiversity Action Plan (BAP) priority species can be seen on the following pages.

Note that GiGL does not currently hold comprehensive species data for all areas. Even where data is held, a lack of records for a species in a defined geographical area does not necessarily mean that the species does not occur there – the area may simply not have been surveyed.

Distances and direction to each species record are calculated from the centre-point of a search area. Note that because the resolution of grid references varies between surveys the accuracy of these figures will also vary.

The species, listed by taxon name, were recorded from a broad range of surveys - from public and species specific surveys to formal surveys carried out during the GLA's rolling program. Bat records collected by the London Bat Group are provided in a separate section (below).

If you would like further information regarding rare, notable and protected species please contact a relevant person listed in the Further Contacts section of this report.

* Protected species are those listed on EC Habitats Directive – Annexes II and IV, EC Birds Directive – Annex I, Conservation (Natural Habitats) Regulations 1994 – Schedules 2 & 4, Wildlife and Countryside Act 1981 (as amended) – Schedules 1, 5 & 8, Protection of Badgers Act 1992

3.1 Protected and BAP Species

Taxon Name	Common Name	Protected Status	Distance (m)	Bearing	Date
Bupleurum tenuissimum	Slender Hare's-Ear	BAP Priority National	1371	SE	1990
Populus nigra betulifolia	Black Poplar	BAP Priority London	1365	SE	2003
Timandra comae	Blood-Vein	BAP Priority National BAP Priority London	1282	SE	14/07/2006
			1282	SE	27/04/2006
			1282	SE	13/06/2006
Tyria jacobaeae	Cinnabar	BAP Priority National BAP Priority London	1282	SE	14/07/2006
			1282	SE	27/04/2006
			1282	SE	13/06/2006
Triturus vulgaris	Smooth Newt	W&CA Sch5 Sec 9.5a W&CA Sch5 Sec 9.5b	1206	NW	16/08/2007
Bufo bufo	Common Toad	W&CA Sch5 Sec 9.5b W&CA Sch5 Sec 9.5a BAP Priority National BAP Priority London	1327	NW	1999
Rana temporaria	Common Frog	W&CA Sch5 Sec 9.5b W&CA Sch5 Sec 9.5a	512	SW	2000
			1100	N	1999
			1327	NW	1999
Falco subbuteo	Hobby	W&CA Sch 1 Part 1	655	SW	03/08/1987
Alcedo atthis	Kingfisher	Birds Dir Anx 1 W&CA Sch 1 Part 1	1431	SE	04/09/2002
Riparia riparia	Sand Martin	BAP Priority London	1431	SE	04/09/2002
			1446	SE	01/05/2002
Phoenicurus ochruros	Black Redstart	W&CA Sch 1 Part 1 BAP Priority London	1211	SE	Apr 1987
Turdus pilaris	Fieldfare	W&CA Sch 1 Part 1	655	SW	13/04/1987
			1211	SE	13/11/1987
			1211	SE	17/11/1987
			1211	SE	18/11/1987
			1211	SE	05/11/1987
			1211	SE	13/12/1987
Turdus philomelos	Song Thrush	BAP Priority National BAP Priority London	840	W	02/10/2002
Turdus iliacus	Redwing	W&CA Sch 1 Part 1	655	SW	02/04/1987
			1211	SE	18/11/1987

Taxon Name	Common Name	Protected Status	Distance (m)	Bearing	Date
			1211	SE	17/11/1987
Sturnus vulgaris	Starling	BAP Priority National BAP Priority London	730	SW	31/08/2001
			840	W	02/10/2002
			919	W	17/08/2007
			968	W	02/10/2002
			1059	SE	Unknown
			1124	N	16/08/2007
			1192	E	10/09/2002
			1227	SE	10/09/2002
Passer domesticus	House Sparrow	BAP Priority National BAP Priority London	213	E	2002
			373	SE	2002
			512	SW	2001
			512	SW	2000
			566	NE	2002
			791	SE	2001
			805	W	2002
			846	E	2002
			871	SW	2002
			933	NW	2002
			990	NW	2002
			1003	N	2002
			1011	SE	2001
			1045	SW	2002
			1052	NW	2002
			1055	E	Unknown
			1124	N	16/08/2007
			1126	W	2002
			1145	W	2002
			1145	W	2001
			1329	NE	2002
Erinaceus europaeus	Hedgehog	BAP Priority National BAP Priority London	512	SW	2001
			1145	W	2001
			1211	NW	2002

Taxon Name	Common Name	Protected Status	Distance (m)	Bearing	Date
Eptesicus serotinus	Serotine	Conservation Regs 1994 Sch2 W&CA Sch 5 Sec 9.1 W&CA Sch 5 Sec 9.2 W&CA Sch5 Sec 9.5a W&CA Sch5 Sec 9.4a W&CA Sch5 Sec 9.5b W&CA Sch5 Sec 9.4b W&CA Sch 5 Sec 9.1 Hab&Spp Directive Anx 2np BAP Priority London	1422	SE	05/08/1997
Nyctalus noctula	Noctule	Conservation Regs 1994 Sch2 W&CA Sch 5 Sec 9.1 W&CA Sch 5 Sec 9.2 W&CA Sch5 Sec 9.5a W&CA Sch5 Sec 9.4a W&CA Sch5 Sec 9.5b W&CA Sch5 Sec 9.4b W&CA Sch 5 Sec 9.1 Hab&Spp Directive Anx 2np BAP Priority National BAP Priority London	1422 1427	SE SE	04/08/1999 14/08/1986
Pipistrellus	Pipistrellus	Conservation Regs 1994 Sch2 W&CA Sch 5 Sec 9.1 W&CA Sch 5 Sec 9.2 W&CA Sch5 Sec 9.5a W&CA Sch5 Sec 9.4a W&CA Sch5 Sec 9.5b W&CA Sch5 Sec 9.4b W&CA Sch 5 Sec 9.1 Hab&Spp Directive Anx 2np	313 442 1059 1495	W W NE SE	07/09/1993 12/08/1992 14/08/1993 30/09/2006
Pipistrellus pipistrellus 55kHz	55 Khz Pipistrelle	Conservation Regs 1994 Sch2 W&CA Sch 5 Sec 9.1 W&CA Sch 5 Sec 9.2 W&CA Sch5 Sec 9.5a W&CA Sch5 Sec 9.4a W&CA Sch5 Sec 9.5b W&CA Sch5 Sec 9.4b W&CA Sch 5 Sec 9.1 Hab&Spp Directive Anx 2np	1422	SE	04/08/1999

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Affiliated to the Bat Conservation Trust

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Haringey, North London and surrounding land to a 2.5x2.5km radius.

CSa Environmental Planning (08/176)

Reports giving only the genus indicate identification to genus level only – Vespertilionidae indicates unidentified bat species. The data is a collection of incidental reports and is not the result of any systematic survey.

All information provided here has been collected by a London Bat Group Recorder and is believed to be correct. However, no responsibility can be accepted by the London Bat Group or any of its partners or officers for any consequences of errors or omissions, nor responsibility for loss occasioned to any person acting or refraining from action as a result of this information and no claims for compensation for damage or negligence will be accepted.

This information is provided solely for the purpose of aiding an assessment of the potential impact of a proposal on bats. The absence of records does not mean that bats are not present or have a place of shelter within any particular site or area. The London Bat Group advises that competent personnel should survey and assess any site, structure or tree that may be affected by any planned work at the earliest possible stage, and certainly before any proposed work starts.

NOTE: TO ENSURE COMPLETENESS DATA COLLECTED BY THE LONDON BAT GROUP ALSO APPEARS IN THE PROTECTED AND NOTABLE SPECIES LIST.

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3.2 Bat Roosts

Taxon Name	Common Name	Protected Status	Distance (m)	Bearing	Date
Pipistrellus	Pipistrellus	Conservation Regs 1994 Sch2 W&CA Sch 5 Sec 9.1 W&CA Sch 5 Sec 9.2 W&CA Sch5 Sec 9.5a W&CA Sch5 Sec 9.4a W&CA Sch5 Sec 9.5b W&CA Sch5 Sec 9.4b W&CA Sch 5 Sec 9.1 Hab&Spp Directive Anx 2np	442	W	12/08/1992

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3.3 Bat Sightings

Taxon Name	Common Name	Protected Status	Distance (m)	Bearing	Date
Eptesicus serotinus	Serotine	Conservation Regs 1994 Sch2 W&CA Sch 5 Sec 9.1 W&CA Sch 5 Sec 9.2 W&CA Sch5 Sec 9.5a W&CA Sch5 Sec 9.4a W&CA Sch5 Sec 9.5b W&CA Sch5 Sec 9.4b W&CA Sch 5 Sec 9.1 Hab&Spp Directive Anx 2np BAP Priority London	1422	SE	05/08/1997
Nyctalus noctula	Noctule	Conservation Regs 1994 Sch2 W&CA Sch 5 Sec 9.1 W&CA Sch 5 Sec 9.2 W&CA Sch5 Sec 9.5a W&CA Sch5 Sec 9.4a W&CA Sch5 Sec 9.5b W&CA Sch5 Sec 9.4b W&CA Sch 5 Sec 9.1 Hab&Spp Directive Anx 2np BAP Priority National BAP Priority London	1422	SE	04/08/1999
			1427	SE	14/08/1986
Pipistrellus	Pipistrellus	Conservation Regs 1994 Sch2 W&CA Sch 5 Sec 9.1 W&CA Sch 5 Sec 9.2 W&CA Sch5 Sec 9.5a W&CA Sch5 Sec 9.4a W&CA Sch5 Sec 9.5b W&CA Sch5 Sec 9.4b W&CA Sch 5 Sec 9.1 Hab&Spp Directive Anx 2np	313	W	07/09/1993
			1059	NE	14/08/1993

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Taxon Name	Common Name	Protected Status	Distance (m)	Bearing	Date
Pipistrellus pipistrellus 55kHz	55 Khz Pipistrelle	Conservation Regs 1994 Sch2 W&CA Sch 5 Sec 9.1 W&CA Sch 5 Sec 9.2 W&CA Sch5 Sec 9.5a W&CA Sch5 Sec 9.4a W&CA Sch5 Sec 9.5b W&CA Sch5 Sec 9.4b W&CA Sch 5 Sec 9.1 Hab&Spp Directive Anx 2np	1422	SE	04/08/1999

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4.0 Contacts

4.1 Borough contacts

Further details of sites and species within the search area may be gathered from the following borough contacts:

London Borough of Enfield

Keith Townsend
Countryside Manager
Percival House
14-16 Uxbridge Road
London
W5 2LH

Tel: 020 8758 5916

London Borough of Haringey

Ian Holt
Project Officer (Nature Conservation)
Recreation Services
Contract House
Park View Road
London
N17 9AY

Tel: 020 8489 5733
Email: ian.holt@haringey.gov.uk

London Borough of Waltham Forest

Ron Presswell
Planning Implementation
Chingford Municipal Offices
16 The Ridgeway
Chingford
E4 6PS

Tel: 020 8496 6019
Email: ron.presswell@walthamforest.gov.uk

4.2 Further Contacts

The following contacts work closely with GiGL and are the best source for further advice or interpretation of the data provided by us. They are widely recognised in Greater London as the experts in their fields, and have provided the following information as the preferred method of contact.

Areas of expertise	**General conservation advice**
Name	**Renata Kowalik**
Organisation	**London Wildlife Trust**
Email	rkowalik@wildlondon.org.uk
Website	www.wildlondon.org.uk

Areas of expertise	**LWT reserve information**
Name	**Tom Clarke**
Organisation	**London Wildlife Trust**
Email	tclarke@wildlondon.org.uk
Website	www.wildlondon.org.uk

Areas of expertise	**Water vole data interpretation**
Name	**Louise Wells**
Organisation	**London Wildlife Trust**
Email	lwells@wildlondon.org.uk
Website	www.wildlondon.org.uk

Areas of expertise	**London BAP species and habitats**
Name	**Nick White**
Organisation	**London Biodiversity Partnership**
Email	nwhite@lbp.org.uk
Website	www.lbp.org.uk

Areas of expertise	**SINCs, open space and habitat survey data advice**
Name	**John Archer**
Organisation	**GLA - Greater London Authority**
Email	john.archer@london.gov.uk
Website	www.london.gov.uk

Areas of expertise	**Statutory site advice**
Name	**Conservation Officer**
Organisation	**Natural England**
Email	london@naturalengland.org.uk
Website	www.naturalengland.org.uk

Areas of expertise	**Bats**
Organisation	**London Bat Group**
Email	enquiries@londonbats.org.uk
Website	www.londonbats.org.uk

Areas of expertise	**Black redstarts, birds, brown and green roofs**
Name	**Dusty Gedge**
Organisation	**Livingroofs.org**
Email	dustygedge@yahoo.co.uk
Website	www.livingroofs.org

Areas of expertise	**Vascular plants**
Name	**Rodney Burton**
Organisation	**London Natural History Society**
Email	rodney.burton@lineone.net
Website	www.lnhs.org.uk

Areas of expertise	**Plant galls, mollusca (freshwater and land), myriapoda and isopoda, ladybirds, bumble bees**
Name	**Ken Hill**
Organisation	**London Natural History Society**
Email	Ken@kenneth17.fsnet.co.uk
Website	www.lnhs.org.uk

Areas of expertise	**Spiders** — identification and recording. Beetles also recorded.
Name	**Edward Milner**
Organisation	**London Natural History Society**
Email	acacia@dial.pipex.com
Website	www.lnhs.org.uk

Areas of expertise	**Invertebrates**
Name	**Colin W Plant**
Organisation	**London Natural History Society**
Email	cpauk1@ntlworld.com
Website	www.lnhs.org.uk

Areas of expertise	**Lichens**
Name	**Amanda Waterfield**
Organisation	**London Natural History Society**
Email	a.waterfield@nhm.ac.uk
Website	www.lnhs.org.uk

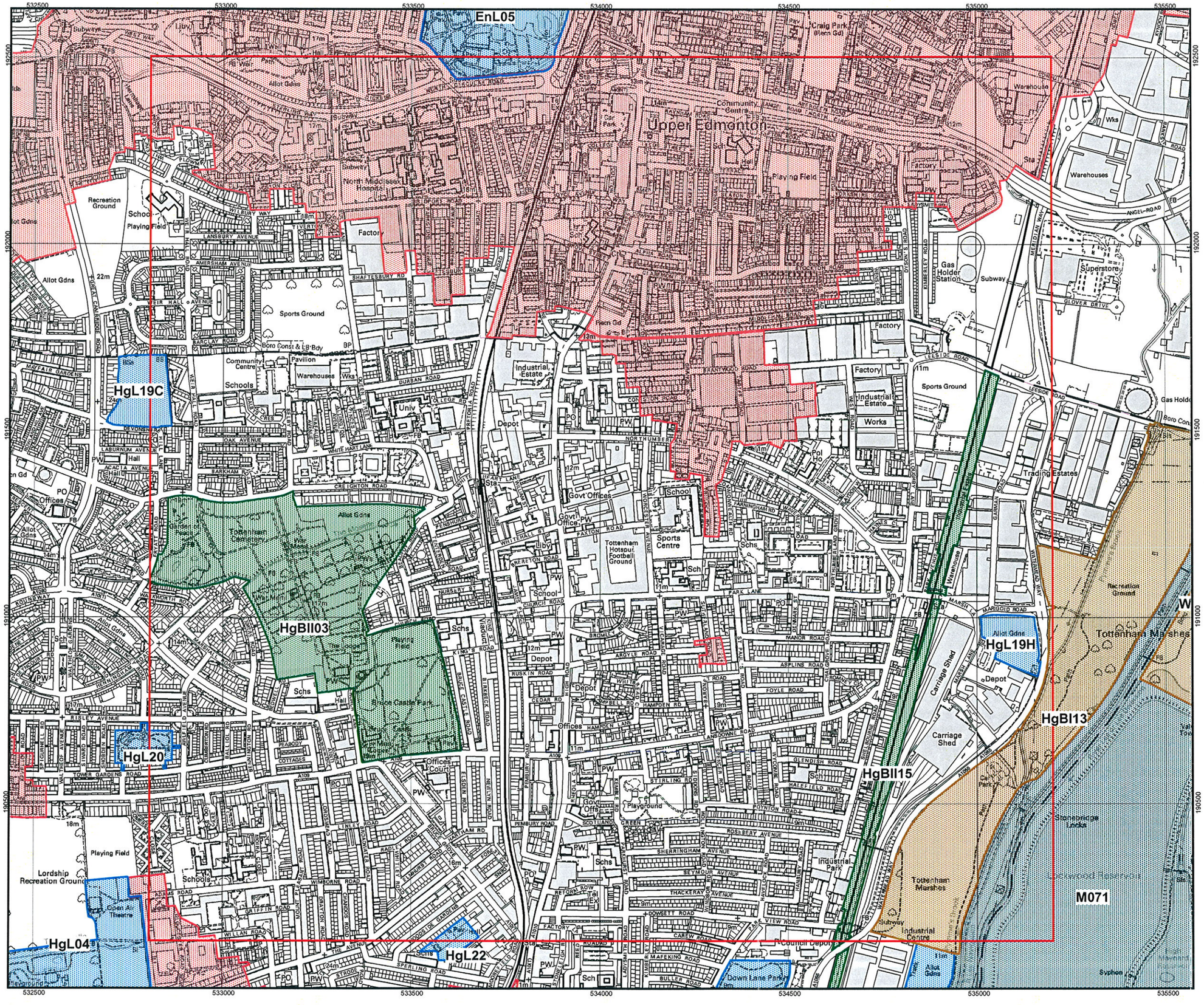
Areas of expertise	**Fungi**
Name	**Ted Tuddenham**
Organisation	**London Natural History Society**
Email	mycorec@blueyonder.co.uk
Website	www.lnhs.org.uk

Areas of expertise	**Odonata – dragonflies and damselflies**
Name	**Neil Anderson**
Organisation	**London Natural History Society**
Email	neil@anders42.freeserve.co.uk
Website	www.lnhs.org.uk

Annex A - Maps

SINCs Map

GREATER LONDON AUTHORITY Sites of Importance for Nature Conservation



Ecological Data Search for CSa Environmental Planning (08/176)

1 May 2008

Haringey, North London

- Search Area
- Site of Metropolitan Importance
- Site of Borough Importance Grade 1
- Site of Borough Importance Grade 2
- Site of Local Importance
- Areas of Deficiency

Scale 1:10000

The Sites of Importance for Nature Conservation have been identified since 1986 using procedures which have now been adopted by the Mayor of London. They are recommended for protection in planning. The boundaries and site grades reflect the most recent consideration of each site, details of which are available from the Trust and the Greater London Authority. Note that boundaries and grades may change as new information becomes available.

Produced by Greenspace Information for Greater London

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Annex B - Supporting Information

Statutory Site Designations

Local Nature Reserve (LNR)
Land owned, leased or managed by Local Authorities and designated under the National Parks and Access to the Countryside Act. A site of some nature conservation value managed for educational objectives — no need for SSSI status. In some cases it is managed by a non-statutory body (e.g. London Wildlife Trust). Local Authorities have the power to pass bylaws controlling (e.g.) access, special protection measures.

Site of Special Scientific Interest (SSSI)
Area notified under the Wildlife and Countryside Act, 1981, by English Nature, the Countryside Council for Wales or Scottish Heritage as being of special interest for nature conservation. Consultation and some form of agreement with the national statutory conservation agency is mandatory before any listed, potentially damaging development, change in land use, etc. can be carried out. SSSI notification forms the statutory bedrock for site protection, although experience has shown that even SSSIs are not sacrosanct.

Biological SSSIs form a national network of wildlife sites in which each site is a distinct discrete link. Sites are selected in such a way that the protection of each site, and hence the network, aims to conserve the minimum area of wildlife habitat necessary to maintain the natural diversity and distribution of Britain's native flora and fauna and the communities they comprise. Each site, therefore, is of national significance for its nature conservation value. The vast majority of SSSIs, and indeed most areas of semi-natural habitat, cannot be created within human time scales and are therefore considered irreplaceable.

Geological SSSIs—more correctly termed Earth Science SSSIs—are the best sites chosen for their research value, the criterion being that they are of national or international importance. Earth Science conservation is concerned with the maintenance of our geological and geomorphological heritage.

National Nature Reserve (NNR)
Statutory reserve established for the nation under the Wildlife and Countryside Act, 1981. NNRs may be owned by a relevant national body (e.g. English Nature in England) or by established agreement; a few are owned and managed by non-statutory bodies. NNRs cover a selection of the most important sites for nature conservation in the UK.

Special Area of Conservation (SAC) and Special Protection Area (SPA)
SACs and SPAs are areas designated under European law and are the most important sites for wildlife in the UK. SACs are designated under the European Habitats Directive (Council Directive 92/43/EEC) and SPAs under the European Birds Directive (Council Directive 79/409/EEC). Both the Habitats and Birds Directive provide for the creation of a network of protected wildlife areas across the EU, to be known as "Natura 2000". The designations aim to conserve important or threatened species and habitats and provide them with increased protection and management.

Ramsar sites
Ramsar sites are wetlands of international importance designated under the Ramsar Convention. The initial emphasis was on selecting sites of importance to waterbirds within the UK, and consequently many Ramsar sites are also Special Protection Areas (SPAs) classified under the Birds Directive. Non-bird features are now increasingly taken into account, both in the selection of new sites and when reviewing existing sites.

SINC Designations

Sites of Importance for Nature Conservation

1 The different kinds of sites and areas

1.1 There are three kinds of site, which are chosen on the basis of their importance to a particular defined geographic area. This use of search areas is an attempt, not only to protect the best sites in London, but also to provide each part of London with a nearby site, so that people are able to have access to enjoy nature.

Sites of Metropolitan Importance

1.2 Sites of Metropolitan Importance for Nature Conservation are those sites which contain the best examples of London's habitats, sites which contain particularly rare species, rare assemblages of species or important populations of species, or sites which are of particular significance within otherwise heavily built-up areas of London.

1.3 They are of the highest priority for protection. The identification and protection of Metropolitan Sites is necessary, not only to support a significant proportion of London's wildlife, but also to provide opportunities for people to have contact with the natural environment.

1.3.1 The best examples of London's habitats include the main variants of each major habitat type, for example hornbeam woodland, wet heathland, or chalk downland. Habitats typical of urban areas are also included, e.g. various types of abandoned land colonised by nature ('wasteland' or 'unofficial countryside'). Those habitats which are particularly rare in London may have all or most of their examples selected as Metropolitan Sites.

1.3.2 Sites of Metropolitan Importance include not only the best examples of each habitat type, but also areas which are outstanding because of their assemblage of habitats, for example the Crane corridor, which contains the River Crane, reservoirs, pasture, woodland and heathland.

1.3.3 Rare species include those that are nationally scarce or rare (including Red Data Book species) and species which are rare in London.

1.3.4 A small number of sites are selected which are of particular significance within heavily built up areas of London. Although these are of lesser intrinsic quality than those sites selected as the best examples of habitats on a London-wide basis they are outstanding oases and provide the opportunity for enjoyment of nature in extensive built environments. Examples include St James's Park, Nunhead Cemetery, Camley Street Natural Park and Sydenham Hill Woods. In some cases (e.g. inner London parks) this is the primary reason for their selection. For sites of higher intrinsic interest it may only be a contributory factor. Only those sites that provide a significant contribution to the ecology of an area are identified.

1.4 The list of sites was updated regularly by the London Ecology Committee. This list, and details of the site boundaries, can be obtained from the Greater London Authority.

1.5 Should one of these sites be lost or damaged, something would be lost which exists in a very few other places in London. Management of these sites should as a first priority seek to maintain and enhance their interest, but use by the public for education and passive recreation should be encouraged unless these are inconsistent with nature conservation.

Sites of Borough Importance

1.6 These are sites which are important on a borough perspective in the same way as the Metropolitan sites are important to the whole of London. Although sites of similar quality may be found elsewhere in London, damage to these sites would mean a significant loss to the borough. As with Metropolitan sites, while protection is important, management of Borough sites should usually allow and encourage their enjoyment by people and their use for education.

1.7 Since 1988 Borough sites have been divided, on the basis of their quality, into two grades, but it must be stressed that they are all important on a borough-wide view.

1.8 In defining Sites of Borough Importance, the search is not confined rigidly to borough boundaries; these are used for convenience of defining areas substantially smaller than the whole of Greater London, and the needs of neighbouring boroughs should be taken into account. In the same way as for Sites of Metropolitan Importance, parts of some boroughs are more heavily built-up and some borough sites are chosen there as oases providing the opportunity for enjoyment of nature in extensive built environments.

1.9 The borough is an appropriate search area in relation to Planning Policy Guidance on nature conservation (1994) which, in paragraphs 15 and 25, states that local plans should identify, and include policies for, areas of local nature conservation importance.

1.10 Since essentially a comparison within a given borough is made when choosing Sites of Borough Importance, there is considerable variation in quality between those for different boroughs; for example, those designated in Barnet will frequently be of higher intrinsic quality than those in Hammersmith and Fulham, a borough comparatively deficient in wildlife habitat. Only those sites that provide a significant contribution to the ecology of an area are identified.

Sites of Local Importance

1.11 A Site of Local Importance is one which is, or may be, of particular value to people nearby (such as residents or schools). These sites may already be used for nature study or be run by management committees mainly composed of local people. Where a Site of Metropolitan or Borough Importance may be so enjoyed it acts as a Local site, but further sites are given this designation in recognition of their role. This local importance means that these sites are also deserving protection in planning.

1.12 Local sites are particularly important in areas otherwise deficient in nearby wildlife sites. To aid the choice of these further local sites, Areas of Deficiency (see below) are identified. Further Local sites are chosen as the best available to alleviate this deficiency; such sites need not lie in the Area of Deficiency, but should be as near to it as possible. Where no such sites are available, opportunities should be taken to provide them by habitat enhancement or creation, by negotiating access and management agreements, or by direct acquisition. Only those sites that provide a significant contribution to the ecology of an area are identified.

Areas of Deficiency

Areas of Deficiency are defined as built-up areas more than one kilometre actual walking distance from an accessible Metropolitan or Borough site. These aid the choice of Sites of Local Importance (see above).

Statutory Species Protections

Statutory Protections

Relevant statutory protections plus brief definitions

Source: - Betts C. J. (1998) *Checklist of Protected British Species 2nd Ed,* Christopher Betts Environmental Biology, Worcester, U.K.

Full Title	***Explanation***
Appendix I of Berne Convention (Convention on the Conservation of European Wildlife and Natural Habitats)	The Berne Convention is designed to protect important populations of listed species and their habitats. This appendix lists flora which are required to be specially protected against deliberate picking, collecting, cutting, uprooting, possession, sale, etc.
Appendix II of Berne Convention (Convention on the Conservation of European Wildlife and Natural Habitats)	The appendix lists strictly protected fauna. The Berne Convention places particular emphasis on migratory species and their breeding and resting sites (see also Bonn below). Listed fauna are required to be strictly protected against deliberate killing, capture, damage/destruction of breeding and nesting sites, disturbance, taking of eggs, trading (including parts and derivatives), etc. Various exceptions can be invoked to avoid, for example, inappropriate situations arising over species which, although listed, are common and widespread.
Appendix III of Berne Convention (Convention on the conservation of European Wildlife and Natural Habitats)	Listed in its appendix are all animals not on Appendix II whose populations are required lobe protected from exploitation (indiscriminate mass killing, trading any means of causing local disappearance or serious disturbance to a species) and managed to keep them out of danger, all other reptiles and amphibians and many other mammals.
Appendix I of Bonn Convention on the Conservation of Migratory Species of Wild Animals	Species on Appendix I are considered to be in danger of extinction and require stringent efforts to ensure protection from virtually any threat. 'Migratory' is a broad term and includes dispersal, recruitment, etc.
Appendix II of Bonn Convention on the conservation of Migratory Species of Wild Animals	Appendix II species are generally of conservation concern and/or deemed to be able to benefit from international co-operation. Signatories are encouraged to draw up agreements (several have been or are being concluded) to restore/maintain species conservation status through management and other appropriate measures.
European Communities Council Directive on the Conservation of Wild Birds	The Directive relates to the conservation of all species or birds naturally occurring in the wild in the European territory of the Member States (but not Greenland), as well as their nests and habitats. A list of taxa (species and sub-species) requiring special conservation measures, such as designation and maintenance of Special Protection Areas, is cited in Annexe to this directive and these species which are included in this Checklist. Birds generally are protected from deliberate killing, taking from the wild, egg collecting, nest destruction and keeping in captivity but allowances are made for game birds. Pest species can be derogated by Member States (carrion crow, collared dove, feral and wood pigeons, rook, jackdaw, great and lesser black-backed gulls, herring gull, jay, magpie, house sparrow and starling in Britain).
Annex II of the European Communities Council Directive on the Conservation of Natural Habitats and Wild Fauna and Flora	Animal and plant species of community interest whose conservation requires the designation of Special Areas of Conservation SACs
Annex IV of the European Communities Council Directive on the Conservation of Natural Habitats and Wild Fauna and Flora	Animal and plant species of community interest in need of strict protection. All life stages are protected against (as appropriate) deliberate capture, killing, disturbance, destruction of eggs, breeding sites or resting places, picking, collecting, cutting, uprooting or destruction in the wild as well as (except for specimens taken before enforcement of the regulations) keeping, transport, sale/exchange.

Full Title	*Explanation*
Annex V of the European Communities Council Directive on the Conservation of Natural Habitats and Wild Fauna and Flora	Animal and plant species of community interest whose taking part in the wild and exploitation may be subject to management measures.
Protection of the Badgers Act 1992	Badgers are extensively protected by this Act, covering virtually any deliberate interference with the animals themselves or their setts.
Schedule I Part I of Wildlife and Countryside Act 1981 (and later amendments)	This Schedule lists birds protected by special penalties at all times. International killing, injuring, taking, possessing, disturbing and selling (including parts and derivatives, eggs, nests, etc. as applicable) as well as damaging, destroying or disturbing nests in current use or dependent young, etc. are prohibited.
Schedule I Part 2 of Wildlife and Countryside Act (including amendments)	Birds are protected by special penalties (as above) during close season.
Schedule 5 of Wildlife Act and Countryside Act 1981 (and later amendments)	Protected animals (other than birds). Deliberate killing, injuring, taking, possessing, disturbing and selling (including parts and derivatives) as well as damaging, destroying or obstructing any structure or places of refuge, etc. are prohibited. NB. Protection of some species is limited to certain Sections of the Act which are indicated in the lists as follows: S9(1) Protection limited to intentional killing, injury or taking. S9(2) Protection limited to protecting and controlling S9(4a) Protection limited to damaging, destroying, or obstructing access to, any place used by the animal for shelter or protection. S9(4b) Protection limited to disturbing the animal while it is occupying any structure or place which it uses for shelter or protection. S9(5) Protection limited to selling, offering for sale, possessing or transporting for purpose of sale, or advertising for sale, any live or dead animal, or any part of or anything derived from such animal.
Schedule 6 of Wildlife and Countryside Act 1981 (and later amendments)	Animals which may not be killed or taken by certain methods (traps and nets, poisons, automatic weapons, electrical devices, smokes/gases and various others). Even humane trapping for research requires a licence Note that bows, explosives, self-locking snares and live bird or mammal decoys are generally prohibited for use against wild animals, irrespective of this Schedule.
Schedule 8 of Wildlife and Countryside Act 1981 (and later amendments)	Protected plants and fungi. Intentional picking, uprooting, destroying, trading (including parts and derivatives), etc. are prohibited. It should be noted that under the Wildlife and Countryside Act, all wild plants in Britain are protected from international uprooting by an unauthorised person (but landowners, land occupiers, persons authorised by either of these, or persons authorised in writing by the Local Authority for the area are exempt). NB. Protection for some species may be limited to certain Sections of the Act and where this is the case it is indicated in the lists as follows: SI3(2) Protection limited to selling, offering for sale, possessing or transporting for purpose of sale, or advertising for sale, any live or dead plant, or any part of, or anything derived from, such plant.

Notable Species

Full Title	*Explanation*
Birds of Conservation Concern (BoCC)	*The Population status of birds in the UK - Birds of Conservation Concern: 2002-2007* is an assessment of the population status of the UK's bird species. It is a list agreed by a group of the UK's statutory and leading non-governmental bird conservation organisations in 2002, chaired by the Royal Society for the Protection of Birds (RSPB). The group reviewed the status of the 247 species which occur regularly in the UK, Channel Islands and the Isle of Man and divided into three lists: Red, Amber and Green. The **Red** List comprises 40 species whose populations or range are rapidly declining, and those of global conservation concern. Several common, but rapidly declining farmland birds are included on the Red List. The **Amber** List comprises the 121 species whose populations are in moderate decline, rare breeders, internationally important, restricted to a small number of sites, or those of an unfavourable conservation status in Europe. All other species occurring in the UK, Channel Islands and Isle of Man are on the **Green** List.
Biodiversity Lists	The UK Biodiversity Steering Group listed a total of 1250 species—the **Long List**—which qualify for inclusion in the **national Biodiversity Action Plan** in one or more of the following categories: • threatened endemic and other globally threatened species • species where the UK has more than 25% of the world or appropriate biogeographical population • species where numbers or range have declined by more than 25% in the last 25 years • in some instances where the species is found in fewer than 15 ten-kilometre squares in the UK • species which are listed in the EU Birds or Habitats Directives, the Bern, Bonn or CITES Conventions, or under the Wildlife and Countryside Act 1981 and the Nature Conservation and Amenity Lands (Northern Ireland) Order 1985 From the Long List, about 400 species were identified as being either globally threatened or rapidly declining in the UK (by more than 50% in the last 25 years). These comprise the **Short List**, for which Action Plans have been prepared, and the **Middle List** for which Action Plans are currently being prepared.

London Biodiversity Action Plan Species

Rationale for selecting priority species for action

1. Background

The *Greater London Authority Act 1999* requires the elected Mayor to produce a Spatial Development Strategy for London, called the London Plan. The first London Plan was published in February 2004. The Act (clause 334(5)) requires the London Plan to deal with matters of strategic importance only. The required content of the plan is set out in a government guidance note (Circular 1/2000).

The London Plan includes an important policy (3D.12) Biodiversity and nature conservation, which links to policies and proposals on approaches to strategic planning in the Mayor's Biodiversity Strategy[1]. Policy 3D.12 contains the following statement;

> *"The Mayor will and boroughs should resist development that would have a significant adverse impact on the population or conservation status of protected species or priority species identified in the London Biodiversity Action Plan and borough BAPs. Appropriate policies for their protection and enhancement and to achieve the targets set out in BAPs, should be included in UDPs."*

This policy is employed by the Mayor of London when considering those larger planning applications referred to him for direction under the *Town and Country Planning (Mayor of London) Order 2000.* Also the London Unitary Development Plans and, increasingly with time, the new Local Development Frameworks of the London Boroughs have to be in general conformity with the London Plan. It is through these local policies that most protection of priority species will occur. The planning protection for priority species should be equivalent to that applying to statutory protected species, although of course development planning can only provide protection from planning-related activities.

The London Biodiversity Partnership published its original Audit of habitats and species in 2000. This lists all habitats of interest in London, as these relate to the UK BAP. The Audit also lists some 300 species of conservation interest occurring in London. All of these could not practically be considered as priorities for conservation action in the London BAP. Importantly, the LBP has adopted a practical approach to species conservation, whereby action for species should be considered and incorporated within the action proposed for their relevant habitats whenever possible. Species Action Plans have been produced only for prioritised species that are not so conveniently habitat-specific.

Ecological survey has re-discovered and recorded many new species resident in Greater London since the Audit was first published. A review of our Species of Conservation Concern has been undertaken to consider these new findings and to identify BAP Priority Species to which the London Plan Policy 3D.12 would apply.

2. The evaluation process

2.1 Species of Conservation Concern in London

Not all of the criteria used for selecting species for the London Species Audit are of primary relevance to a list of species of conservation concern. For reasons explained in the Audit, a suite

[1] *Connecting with London's nature, The Mayor's Biodiversity Strategy*, GLA July 2000

of species was selected to include: species that are relatively ubiquitous and therefore characteristic of London (ie. suitable as "flagships"); that are "culturally valued"; easy to monitor; and/or that are good indicators of their supportive habitats. None of these criteria is directly relevant to species' conservation status.

Criteria for the selection of UK BAP[2] Species of Conservation Concern are as follows;

- Threatened endemic and other globally threatened species;
- Species where the UK has more than 25% of the world or appropriate biogeographical population;
- Species where the UK numbers or range have declined by more than 25% in the last 25 years;
- In some instances where the species is found in fewer than 15 ten km squares in the UK;
- Species listed for protection in the EU Birds or Habitats Directives, the Bern, Bonn or CITES Conventions, or under the *Wildlife and Countryside Act 1981*.

Data is deficient for rates of decline of many species groups locally. Adaptation of the UK SCC criteria to the Greater London regional context has involved the following;

- All UK SCC; nationally threatened (ie. Red Data listed); Nationally Scarce (Na, Nb, N); and (for birds) RSPB Red/Amber List species, with native or long-established naturalised populations occurring in Greater London;
- Species with native or long-established naturalised populations, which are rare[3] in Greater London and are known to be in national or regional decline (as ascertained from national distribution atlases);
- Some further species that are known to have declined significantly in Greater London in recent years.

The list of Species of Conservation Concern in Greater London is presented as four taxonomically grouped spreadsheets, titled Plants, Fungi, Vertebrates and Invertebrates. The list is not comprehensive in respect of the above criteria for some invertebrates and lower plants, for which presence in London and threat categories are less certain. The list should be viewed as the regional equivalent of the original UK BAP 'long list'. From the list of Species of Conservation Concern in Greater London, our Priority BAP Species have been identified (see next).

2.2 Priority Species in London

Criteria for selection of UK BAP Priority Species are as follows;

- Species that are globally threatened;
- Species that are rapidly declining in the UK, ie. by more than 50% in the last 25 years.

In accordance with national guidance, London BAP Priority Species must include;

- All UK BAP Priority Species with native or long-established naturalised populations in Greater London.

Further species have been selected using the following criteria;

- Species for which Species Action Plans are currently being implemented in the London BAP;
- Nationally threatened (Red Data listed) species with native or long-established naturalised populations in Greater London;
- UK SCC and declining Nationally Scarce species with significant[4] native or long-established naturalised populations within Greater London, (ie. for which a regional responsibility for conservation may be clearly demonstrated).

[2] *The UK BAP*; www.ukbap.org.uk
[3] occurring in <5% (=20) of Greater London tetrads or equivalent

- Species with native or long-established naturalised populations that are known to have undergone a recent significant decline in Greater London, or for which Greater London holds the majority of the known UK population.

[4] for example: the only population within its 10km grid square; a population at the edge of a declining species' UK range; a constituent of an isolated UK population; an exceptionally strong core area population

Habitat Surveys

1 Survey information

1.1 In order to choose sites for protection it is necessary to have good survey information on the habitats and species of all candidate areas.

The London Wildlife Habitat Survey

1.2 Information on wildlife habitats can be collected in a standardised, comprehensive survey. We are fortunate in London in having such a survey, first carried out by the London Wildlife Trust for the Greater London Council in 1984/85, and updated and extended in various surveys since, including re-examination of sites to be described in the handbook series or in relation to proposed developments or management. In a number of London boroughs a systematic survey has been carried out using the London Ecology Unit's specification since 1985. The specification was updated in 2000, when the GLA was established, to collect additional data required for open space planning. The format of the survey is similar to those usually described as 'Phase I' or 'Field by Field', but is enhanced by the extensive use of standardised written notes. The Authority holds this survey information.

1.3 The initial survey documented areas with semi-natural habitats (more natural than well-gardened allotments or heavily mown urban playing fields) and was also confined to large areas (above 0.5 ha for inner boroughs and 1 ha for outer boroughs). Much subsequent survey work has documented open spaces regardless of their natural quality and has used a much lower area threshold, to provide a more comprehensive coverage.

1.4 The wildlife habitat survey helps to ensure that candidate sites are not overlooked and that the same essential minimum of information is available for each. There is usually little other information available on the quality of the wildlife habitats, but any information provided is taken into account.

Information on species

1.5 Information on species, which has been obtained in a consistent and standardised manner as part of the systematic survey of habitats may be used by the Authority in reaching decisions on site quality. Other information on species, relating to individual sites, is frequently available but has rarely been collected in a systematic way so as to allow straightforward comparisons with other sites.

1.6 Information on species is often available from local naturalists, who are able to observe sites throughout seasons and years to provide an accurate and quite comprehensive listing of these and who may publish accounts of particular species or sites. Valuable though this information is, it often proves difficult to use it to compare candidate sites, as the recording effort put into each site may differ greatly and so may the completeness of the list. The length of the species list and the detection of rare species therefore depends upon the searching effort. For these reasons, such information on species is used only together with knowledge of how the information was obtained and of the way in which the ecology of individual species affects their apparent status.

1.7 The policy of the Authority is to take considerable care in interpreting site-based species data to ensure that fully professional standards are maintained.

Habitat Types

A list of habitats for open space survey in London

Code	Name	Definition
01/02 /03	Woodland	Stands of trees forming at least 75% cover, including coppice and trees of shrub size, but excluding fen carr (19). Includes stands of willow except *Salix cinerea, caprea* and *viminalis*, but excludes hawthorn, hazel (except hazel coppice with standards), elder, juniper and the three willow species listed above, which are always scrub (06) regardless of height. Where the species composition does not fulfil any of 01, 02 or 03 below, code as a mixture. Always record % shrub layer under the qualifiers.
01	Native broadleaved woodland	Woodland (see above) with native broadleaved species (i.e. excluding sycamore and sweet chestnut) comprising at least 75% of the canopy.
02	Non-native broadleaved woodland	Woodland (see above) with non-native broadleaved species (including sycamore and sweet chestnut) comprising 75% of the canopy.
03	Coniferous woodland	Woodland (see above) with coniferous species (including yew) comprising 75% of the canopy.
37	Scattered trees	Trees forming less than 75% canopy cover over another habitat (excluding coppice with standards, which is coded as woodland). Record percentage tree cover here, and the rest of the area under the appropriate habitat.
05	Recently felled woodland	Does not include coppice, which is coded as woodland.
06	Scrub	Dominated (at least 75% cover) by shrubs (usually less than 5 metres tall), excluding fen carr (19), heathland (15), young woodland, coppice, hedges (25, 34) and planted shrubberies (38). Includes stands of hawthorn, hazel (except coppice with standards), elder and *Salix cinerea, caprea* and *viminalis* regardless of height.
38	Planted shrubbery	Dominated (at least 75% cover) by shrubs, usually non-native species, the majority of which have clearly been planted. Excludes hedges (25, 34).
25	Native hedge	Line of shrubs, with or without treeline, one or two mature shrubs wide (wider belts should be coded as scrub or woodland), with native species comprising at least 75% of the shrubs.
34	Non-native hedge	As above but with non-native species comprising at least 75% of the shrubs. If neither 25 nor 34 apply, code as a mixture.
31	Orchard	Planted fruit or nut trees forming at least 50% canopy cover.
36	Vegetated walls, tombstones. etc	Includes ruins, fences and other artificial structures with an appreciable amount of vegetation (including mosses and lichens) but excluding artificial water margins, which should be coded as wet marginal vegetation (18) if vegetated.
26	Bare soil and rock	Includes active quarries, fresh road workings, spoil or tipping and earth banks of water habitats, where these are minimally vegetated. Excludes

Code	Name	Definition
		arable land (28).
27	Bare artificial habitat	Includes tarmac, concrete, railway ballast, gravel paths, buildings and artificial margins to aquatic habitats, where these are minimally vegetated.
08	Acid grassland	Un- or semi-improved grassland on acidic soils, with less than 25% cover of heather or dwarf gorse. Excludes reedswamp (17). Usually with one or more of *Deschampsia flexuosa, Molinia caerulea, Nardus stricta, Juncus squarrosus, Galium saxatile, Potentilla erecta* or *Rumex acetosella* in abundance.
09	Neutral grassland (semi-improved)	Mesotrophic grassland usually with one or more of *Arrhenatherum elatius, Deschampsia cespitosa, Alopecurus pratensis, Cynosurus cristatus, Dactylis glomerata, Festuca arundinacea* or *F.pratensis.* Contains more than just *Lolium perenne, Trifolium repens, Rumex acetosa, Taraxacum, Bellis perennis* and *Ranunculus* species (see 07 and 11), but lacks the characteristic forbs of 35. Excludes reedswamp (17).
35	Neutral grassland (herb-rich)	Mesotrophic grassland with more forbs typical of old grassland than 09. Likely to contain one or more of *Primula veris, Lychnis flos-cuculi, Achillea ptarmica, Silaum silaus, Succisa pratensis, Stachys officinalis, Serratula tinctoria, Ophioglussum, Gensita tinctoria, Sanguisorba officinalis* or *Caltha palustris,* or an abundance of *Carex ovalis, Pimpinella saxifraga, Conopodium majus, Cardamine pratensis, Knautia* or *Filipendula ulmaria.*
10	Basic grassland	Un- or semi-improved grassland containing calcicoles. Usually with some of *Brachypodium pinnatum, Bromopsis erecta, Heliotrichon pratense, Thymus polytrichus, Sanguisorba minor, Centaurea scabiosa* or *Origanum vulgare* in some abundance.
11	Improved or re-seeded agricultural grassland	Species-poor mesotrophic grassland containing little but *Lolium perenne, Trifolium repens, Agrostis* species, *Bellis perennis, Taraxacum* and *Ranunculus* species. Distinguished from 07 by its agricultural use and hence usually less frequent mowing.
07	Amenity grassland	Usually frequently mown, species-poor mesotrophic grassland characteristic of parks and sports pitches, containing similar species to 11. Scattered trees and shrubberies in parks should be coded separately.
12	Ruderal or ephemeral	Communities composed of pioneer species such as occur in early succession of heavily modified substrates. Typical species include *Senecio squalidus, S.vulgaris, Sinapis arvensis, Poa annua, Hirschfeldia incana* and species of *Polygonum, Persicaria, Melilotus, Atriplex, Chenopodium, Medicago, Vulpia, Picris, Lactuca, Diplotaxis, Conyza* and *Reseda.*
13	Bracken	Stands where bracken is dominant. Also used with other habitat codes to indicate scattered bracken.
14	Tall herbs	Stands of tall non-grass herbaceous species, often rhizomatous perennials, such as *Fallopia japonica, Conium maculatum, Chamerion angustifolium, Anthriscus sylvestris, Urtica dioica, Epilobium hirsutum, Solidago canadensis* and species of *Aster* and *Heracleum.* Excludes herbaceous fen vegetation 32).

Code	Name	Definition
33	Roughland	An intimate mix of semi-improved neutral grassland (09), tall herbs (14) and scrub (06). If these occur in large enough patches they should be coded separately. Usually the next successional stage after 12.
15	Heathland	Dwarf-shrub cover greater than 25% of species such as heathers and *Ulex minor*, with less than 50% cover of *Sphagnum*. May include a large amount of acid grassland (06) in a close mosaic, but code as a mixture if grassland areas are large.
39	Allotments (active)	Communal allotment gardens which are under cultivation. Code disused plots under other habitats as appropriate.
28	Arable	Cropland, horticultural land (excluding allotments), freshly ploughed land and livestock paddocks stocked so heavily as to have little vegetation.
16	Bog	Dominated by *Sphagnum* mosses (greater than 50% cover) with water table at or just below the surface.
17	Reedswamp	Stands of *Phragmites australis* with at least 75% cover of reeds. Includes dry and tidal stands.
40	Typha, etc swamp	Stands of *Glyceria maxima, Typha* species or *Phalaris arundinacea* where these species form at least 75% cover.
18	Wet marginal vegetation	Emergent vegetation with a permanently high water table in strips less than five metres wide on the margins of water bodies. Contains species such as *Iris pseudacorus, Apium nodiflorum, Acorus calamus* and species of *Rorippa, Alisma* and *Juncus*. May include *Phragmites, Typha* and *Glyceria maxima*, but where these form single-species stands code as 17 or 40 respectively. Usually too small to map but must always be coded if present.
19	Fen carr	Woodland or scrub over herbaceous vegetation with the water table above ground for most of the year.
20	Standing water (includes canals)	Lakes, reservoirs, pools, wet gravel pits, ponds, canals, docks and brackish lagoons beyond the limit of swamp or wet marginal vegetation. Always code vegetated margins separately and note trophic status and whether saline or tidal.
21	Ditches (water filled)	Distinguished from 20 and 22 by their (often agricultural) drainage role. Always code vegetated margins separately and note trophic status and whether saline or tidal.
22	Running water	Rivers and streams. Always code vegetated margins separately and note trophic status and whether saline or tidal.
23	Intertidal mud, sand, shingle, etc	Intertidal areas without significant vegetation of higher plants. Try to record the extent at low tide.
24	Saltmarsh	Intertidal areas appreciably vegetated with higher plants, excluding reedswamp (17).
30	Habitat information not available	Areas which cannot be observed due to restricted access, etc.
29	Other	To be avoided if possible. Must be specified if used.

Code	Name	Definition
32	Species-rich herbaceous fen	Stands of herbaceous vegetation where the water table is above ground for most of the year, with less than 75% dominance of *Phragmites, Typha, Glyceria* and *Phalaris arundinacea*. Distinguished by width from 18. So rare in London that it is not on the survey form; write in under "Other" if required.

Open Space Designations

Green Belt – The London Plan Policy 3D.8

The Mayor will and boroughs should maintain the protection of London's Green Belt and proposals for alterations to Green Belt boundaries should be considered through the UDP process in accordance with government guidance in PPG2. There is a general presumption against inappropriate development in the Green Belt, and such development should not be approved except in very special circumstances.

3.247 The inclusion of land within the Green Belt performs a valuable role in preventing urban sprawl and promoting an urban renaissance. The Green Belt also protects the openness of the land in order to prevent towns merging, safeguards the countryside and preserves historic settlements. The use of Green Belt land should provide Londoners with access to the countryside, opportunities for outdoor recreation, protection and enhancement of attractive landscapes, the improvement of damaged and derelict land, protection and promotion of biodiversity and retention of agricultural land. The Green Belt is a permanent feature and its boundary should only be altered in exceptional circumstances. The quality of land within the Green Belt is not reason in itself for excluding land from the Green Belt or allowing development. Where Green Belt land is of poor quality, steps should be taken to improve it. This may include undertaking a review of a wide area and identifying actions to promote improvements.

Metropolitan Open Land – The London Plan Policy 3D.9

The Mayor will and boroughs should maintain the protection of Metropolitan Open Land (MOL) from inappropriate development. Any alterations to the boundary of MOL should be undertaken by boroughs through the UDP process, in consultation with the Mayor and adjoining authorities. Land designated as MOL should satisfy one or more of the following criteria:

- land that contributes to the physical structure of London by being clearly distinguishable from the built-up area
- land that includes open air facilities, especially for leisure, recreation, sport, arts and cultural activities and tourism which serve the whole or significant parts of London
- land that contains features or landscapes of historic, recreational, nature conservation or habitat interest, of value at a metropolitan or national level
- land that forms part of a Green Chain and meets one of the above criteria.

Policies should include a presumption against inappropriate development of MOL and give the same level of protection as the Green Belt. Essential facilities for appropriate uses will only be acceptable where they do not have an adverse impact on the openness of MOL.

3.248 The Metropolitan Open Land (MOL) designation is unique to London, and protects strategically important open spaces within the built environment. Although MOL may vary in size and primary function
in different parts of London, it should be of strategic significance, for example by serving a wide catchment area or drawing visitors from several boroughs. MOL is the same as the Green Belt in terms of protection from development and serves a similar purpose. It performs three valuable functions:

- protecting open space to provide a clear break in the urban fabric and contributing to the green character of London
- protecting open space to serve the needs of Londoners outside their local area
- protecting open space that contains a feature or landscape of national or regional significance.

3.249 MOL will be protected as a permanent feature, and afforded the same level of protection as the Green Belt. Appropriate development should minimise any adverse impact on the open character of MOL through sensitive design and siting and be limited to small scale structures to support outdoor open space uses. The boundary of MOL should only be altered in exceptional circumstances and should be undertaken through the UDP process in consultation with the Mayor. Development that involves the loss of MOL in return for the creation of new open space elsewhere will not be considered appropriate.

3.250 Green Chains are important to London's open space network, recreation and biodiversity. They consist of footpaths and the open spaces that they link, which are accessible to the public. Because of their Londonwide significance, the open spaces and the links within a Green Chain should be designated as MOL.

Open Space Categories

i. Parks and Gardens

Park refers to traditional public open spaces laid out formally for leisure and recreation. They usually include a mixture of lakes, ponds, lidos, woodland, flower beds, shrubs, ornamental trees, play spaces, formal and informal pitches, bowling greens, tennis courts, golf pitch & put, footpaths, bandstands, toilets, cafes and car parks - but not necessarily all of these. Parts of some parks might be managed as so-called natural areas. Examples of parks include the Royal Parks, municipal parks such as Battersea and Victoria, and wilder places such as Hampstead Heath which, although having distinctly informal qualities, are maintained predominantly for the same purpose, and include the usual swings and roundabouts and playing pitches. Many parks are enclosed by walls or railings, although some parks that began as common land may not be enclosed.

Formal garden refers to spaces with well defined boundaries that display high standards of horticulture with intricate and detailed landscaping. It includes the London squares common to central London, which are typically square areas of grass with some shrub borders, bounded by railings, and surrounded by buildings. Examples include Belgrave Square and Soho Square.

ii. Natural and Semi Natural

Common refers to publicly accessible open space that has few if any 'facilities'. It will typically be mainly open rough grassland (not mown playing field or recreation ground type grass) and/or woodland, and may have a limited provision of facilities. In typology terms, commons are much less formal than parks or parkland. Examples include Wimbledon Common, Wanstead Flats, and parts of Epping Forest.

Private woodland refers to woodland which is not accessible for recreational use, nor managed for nature conservation. Record this under "other" until the survey form is revised to accommodate it.

Nature reserve is a category reserved for an open space that is managed primarily for nature conservation. Do not tick this box just because the site has a nature conservation designation. Many parks, etc. have such designations. An SSSI is likely to have park, common or agriculture as its type. Designated Local Nature Reserves, however, are recorded here. Also do not tick this box where you find small areas set aside for nature within parks, commons and other open spaces.

iii. Green Corridors

River should only be used for rivers and streams that do not form part of another land use, such as park, common or nature reserve.

Canal implies an artificial waterway which is navigable. Include docks in this category.

Railway cutting and **railway embankment** are self-explanatory.

Disused railway trackbed is usually obvious, with some traces of its former use. Where disused trackbeds are specifically managed for nature conservation, such as Parkland Walk, record as nature reserve.

Road island/verge is self-explanatory. Record as nature reserve if specifically managed for nature conservation.

Walking / cycling route is a designated footpath / cycleway through informal open space often along former railways or canals but record these examples as Disused railway trackbed or Canal.

iv. Outdoor Sports Facilities

Recreation ground is an area of mown grass used primarily for informal, unorganised ball games and similar activities (including dog walking). Not to be confused with playing fields, below.

Playing field is a site comprising playing pitches, usually for football, but also for rugby and hockey and, in the summer, for cricket. Playing pitches may not always be laid out in the summer, so look out for notice boards or changing rooms and pavilions for evidence. Include sites here even if they appear disused. Include school playing fields. Almost always, playing fields consist only of pitches; but they will sometimes have other bits of open land around the edges. Do not include sites that partly contain playing pitches but are more properly categorised as parks or commons. Pitches are often to be found in parks and commons, but the type here is concerned with sites that are exclusively or predominantly reserved for organised team sports.

Golf course: do not include golf courses that are part of parks, commons etc. This type does not include golf driving ranges, pitch & putt or crazy golf.

Other recreational is to be used for sites that are used exclusively or predominantly for other organised sports such as bowls, tennis and golf driving ranges (but not golf courses, see below).

v. Amenity

Village green is usually an expanse of grass in the centre of old villages, often used in the summer for cricket.

Hospital includes the grounds of any clinic or health centre.

Educational refers to school or college grounds and field study centres where school education is the primary function. Nature sites which cater for schools and for the general public should be recorded under nature reserves. School playing fields should be recorded under playing fields.

Back garden land is self-explanatory. While most surveys exclude private gardens, backlands are often surveyed for planning casework.

Landscaping around premises includes communal amenity space around housing estates and community centres, and also landscaping around industrial premises.

Reservoir includes covered reservoirs unless these form part of a park.

vi. Children and Teenagers

Play space is a site set aside mainly for children. It will contain the usual paraphernalia of swings, slides and roundabouts. Do not record play spaces here if they form part of parks, commons and other open spaces.

Adventure playground is a defined play area for children in a supervised environment. Boundaries and entrances are secure.

Youth area is a defined area for teenagers including skateboard parks, outdoor basketball hoops and other more informal areas such as 'hanging out' areas and teenage shelters.

vii Allotments, Community Gardens and City Farms

Allotments should be obvious. Include them even if they appear or are disused.

Community garden includes an area that is generally managed and maintained by the local population as a garden and/or for food growing and normally restricted in their access. For examples Pheonix Garden in Holborn.

City farm includes areas that are generally managed and maintained as a small farm by the local population, containing livestock and planting and normally restricted in their access. For example Freightliners Farm in Islington.

viii. Cemeteries and Churchyards

Churchyard/cemetery includes burial grounds, graveyards, crematorium grounds and memorial gardens, and gardens or grounds of non-Christian places of worship. Some former or burial grounds that have become full have been converted to informal leisure or recreation spaces; where the gravestones have been removed, these should be recorded as parks.

ix. Other Urban Fringe

Equestrian centre includes any land used for intensive horse keeping and riding, but not extensive horse grazing, which should be recorded as agriculture.

Agriculture includes arable and grazing land, including horse grazing, and market gardening (such as vegetables, often grown under cloches, etc.).

Nursery/horticulture does not include commercial retail nurseries (although these might legitimately form a part of a park or common, etc.). Horticulture includes areas of permanent glasshouses.

x. Civic Spaces

Civic/market square includes tarmac areas or paved open spaces, which may or may not include planting. However, they do not necessarily have seats and may just be a plaza area, with some planting (usually trees) and public art. Often provide a setting for civic buildings and opportunities for open air markets, demonstrations and civic events. Examples include the area in front of the jubilee line station at Canary Wharf, and the plaza in front of Westminster Cathedral.

Other hard surfaced areas include other areas designed for pedestrians. These typically are used as 'sitting out' areas, where workers can enjoy the sun and eat their sandwiches, and as such usually have seats or benches. For example, Emma Cons Gardens opposite the Old Vic Theatre. This category excludes pedestrianised streets, car parks, servicing areas to buildings, and housing amenity space such as communal courtyards.

xi. Other

Sewage/water works includes extensive sludge drying areas, filter beds, etc.

Disused quarry/gravel pit may be water-filled, but is not necessarily so.

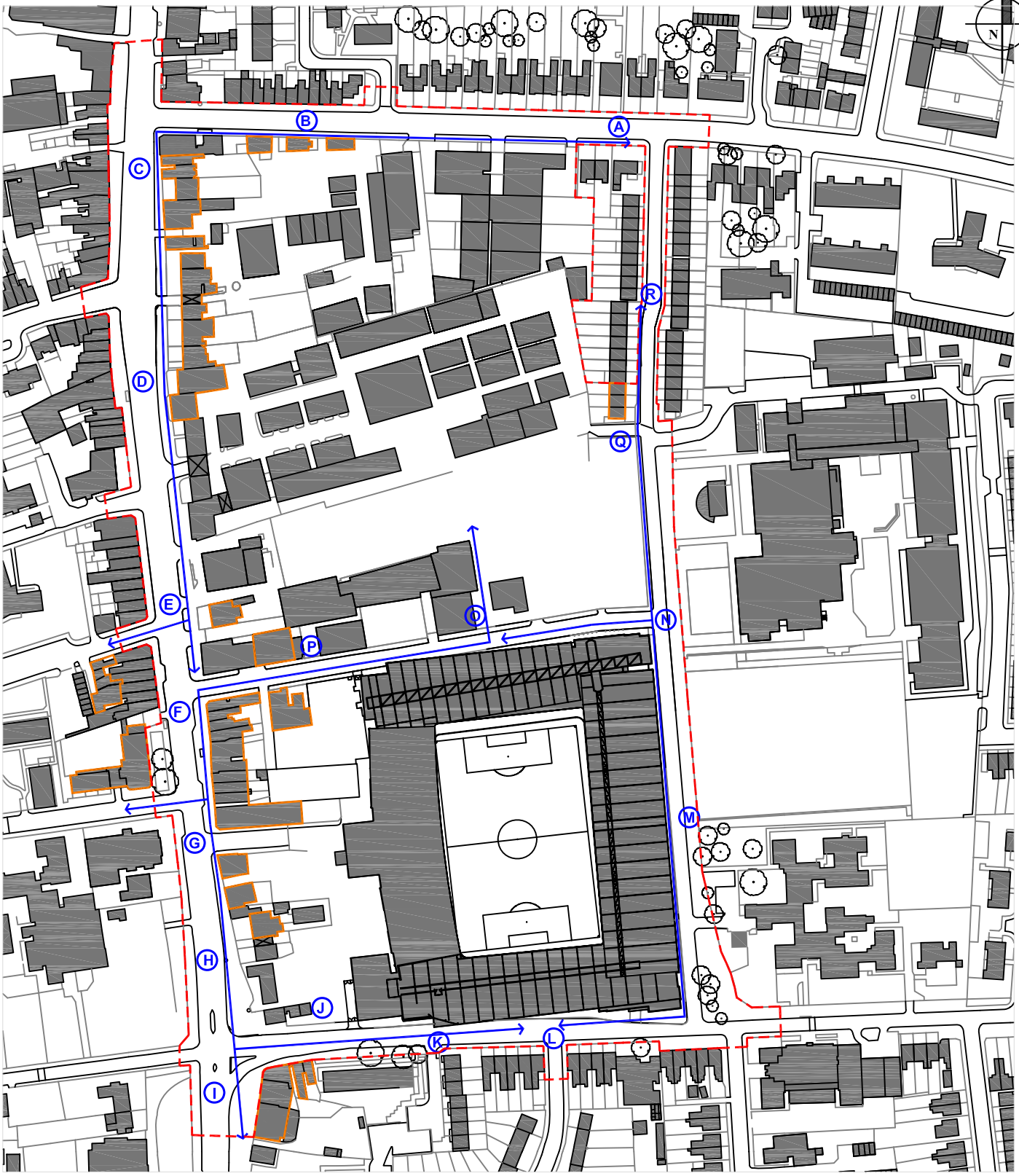
Vacant land is land with no formal land use. This includes many "urban commons" which are used by people for informal recreation and which may be very valuable for nature conservation. If sites have formalised access and management for nature conservation, record as commons or nature reserves as appropriate.

Land reclamation is land recently decontaminated or reclaimed from disuse, which has not yet been redeveloped.

Others could be anything that does not fit any of the above categories, such as airfields or forestry (not wooded commons or woodland nature reserves).

APPENDIX C

Bat Survey Transect Route Plan
CSA/1037/101



LEGEND

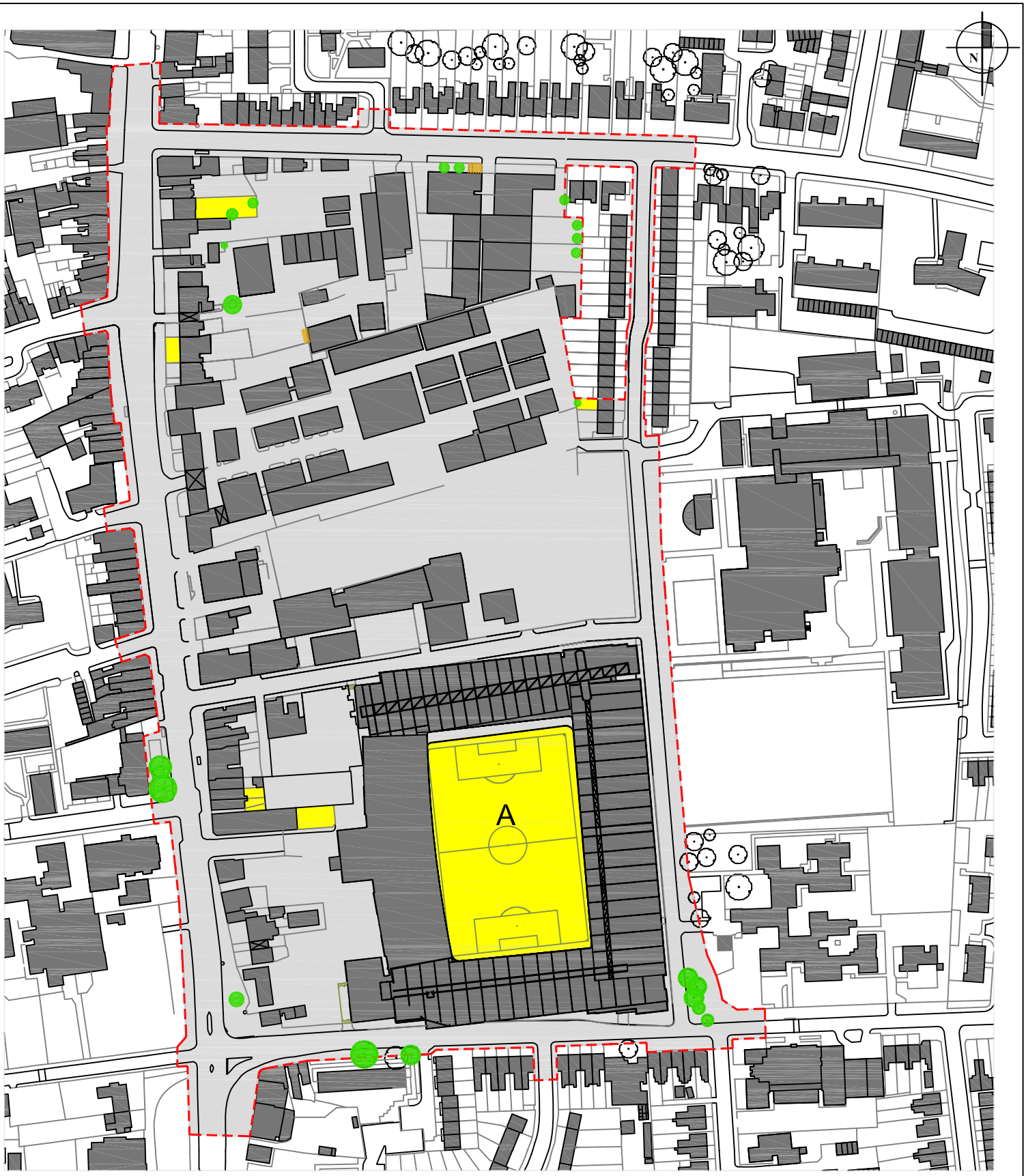
- Site boundary
- Building with significant bat potential
- Bat survey transect route
- Bat survey transect point

CSa environmental planning
5F Deer Park Business Centre
Woollas Hall, Eckington, Pershore
Worcestershire WR10 3DN
Tel: 01386 751100
Fax: 01386 751144
Email:pershore@csaenvironmental.co.uk

Project:	Northumberland Development Project			Drawing Number:	CSA/1037/101
Title:	Bat Potential & Survey Routes Plan			Revision:	-
Date:	October 2008	Drawn:	SG	Client:	Tottenham Hotspur
Scale @ Size:	Not to Scale	Checked:	LC		

APPENDIX D

Habitats Plan
CSA/1037/100



LEGEND

- Buildings
- Hardstanding
- A — Amenity Grassland
- Broad-leaved Trees
- Tall ruderals
- Site boundary

CSa environmental planning
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Project:	Northumberland Development Project			Drawing Number:	CSA/1037/100
Title:	Habitats Plan			Revision:	-
Date:	October 2008	Drawn:	SG	Client:	Tottenham Hotspur
Scale @ Size:	Not to Scale	Checked:	LC		

APPENDIX E

Bat Survey Results

Survey date: 26 June 2008 (Dusk)

Time	Surveyor 1 LC	Surveyor 2 AM	Surveyor 3 KL
20.55	START OF SURVEY		
20.55-22.30	No activity	No activity	No activity
22.30	22.31. Noctule heard briefly midway between A & B		
22.35-22.55	No activity		
22.55	END OF SURVEY		

Survey date: 27 June 2008 (Dawn)

<table>
<tr><th>Time</th><th>Surveyor 1 LC</th><th>Surveyor 2 AM</th><th>Surveyor 3 KL</th></tr>
<tr><td>02.45-</td><td colspan="3">START OF SURVEY</td></tr>
<tr><td>02.45-
03.00</td><td rowspan="8">No activity</td><td rowspan="11">No activity</td><td>No activity</td></tr>
<tr><td>03.00</td><td>03.03. Common pipistrelle foraging briefly on corner midway between L & M</td></tr>
<tr><td>03.05</td><td>No activity</td></tr>
<tr><td>03.10</td><td>03.14. Common pipistrelle foraging briefly on corner midway between L & M</td></tr>
<tr><td>03.15-
03.45</td><td>No activity</td></tr>
<tr><td>03.45</td><td>03.49.Common pipistrelle flying over off-site trees and buildings to east of southeast corner of site</td></tr>
<tr><td>03.50-
04.10</td><td rowspan="4">No activity</td></tr>
<tr><td>04.10</td><td>04.14. Noctule flying from east past point B and off to northwest over block of flats on Bennetts Close</td></tr>
<tr><td>04.15</td><td>04.15. Noctule sighted from B over flats on Bennetts Close
04.18. Noctule seen beyond block of flats from B. High up and flying west</td></tr>
<tr><td>04.20-
04.48</td><td>No activity</td></tr>
<tr><td>04.48</td><td colspan="3">END OF SURVEY</td></tr>
</table>

Survey date: 08 July 2008

<table>
<tr><th>Time</th><th>Surveyor 1 LC</th><th>Surveyor 2 AM</th><th>Surveyor 3 KL</th></tr>
<tr><td>21.00</td><td colspan="3">START OF SURVEY</td></tr>
<tr><td>21.00-21.45</td><td rowspan="2">No activity</td><td rowspan="10">No activity</td><td>No activity</td></tr>
<tr><td>21.45</td><td>21.49-21.54. Common pipistrelle foraging over trees and house nr southeast corner of site. Flew off to the east away from site.</td></tr>
<tr><td>21.55</td><td>21.56. Noctule heard faintly midway between A and B
21.57. Noctule heard faintly midway between A and B</td><td>21.55. Noctule heard in distance from midway between L and M
21.56. Noctule heard in distance from midway between L and M
21.57. Noctule flying south along east stand of stadium</td></tr>
<tr><td>22.00</td><td>No activity</td><td rowspan="6">No activity</td></tr>
<tr><td>22.05</td><td>22.06. Noctule heard faintly midway between A and B.
22.09. Noctule heard midway between A and B.</td></tr>
<tr><td>22.10-22.25</td><td rowspan="8">No activity</td></tr>
<tr><td>22.25</td><td>22.28. Common pipistrelle heard at Point H</td></tr>
<tr><td>22.30</td><td rowspan="4">No activity</td></tr>
<tr><td>22.35</td><td>22.38. Common pipistrelle brief contact at M</td></tr>
<tr><td>22.40</td><td>No activity</td></tr>
<tr><td>22.45</td><td>22.45. Noctule heard briefly at midway between L & M</td></tr>
<tr><td>22.50-23.00</td><td rowspan="2">No activity</td></tr>
<tr><td>23.00</td><td>23.00. Noctule heard at point I.</td></tr>
<tr><td>23.03</td><td colspan="3">END OF SURVEY</td></tr>
</table>

Survey date: 09 July 2008

Time	Surveyor 1 LC	Surveyor 2 AM	Surveyor 3 KL
02.55-	START OF SURVEY		
02.55-03.25	No activity	No activity	No activity
03.25		03.28. Noctule heard in distance at point I	
03.30		No activity	
03.35			03.39. Noctule heard at L
03.40			03.43. Common pipistrelle briefly heard midway between L & M
03.45			No activity
03.50			
03.55	03.55. Noctule heard between C and D 03.56. Noctule heard between C and D		
04.00	No activity		04.03. Noctule heard at L, probably flying from Worcester Avenue to Park Lane
04.05	04.05. Noctule heard over Park Lane at J	04.05. Noctule heard at Point A	No activity
04.10	No activity	04.12. Noctule flying north to south over Spurs car park 04.13. Noctule flying north to south over Spurs car park	No activity
04.15	04.16. Probable noctule – faint call detected at Point B	No activity	
04.20	No activity	04.23. Bat sp. heard briefly at J	
04.25		04. 27. Noctule flying northwest over Point J 04.28. Noctule flying northwest over Point J	04.27. Noctule heard in distance at Point N
04.30-04.55		No activity	No activity
04.55	END OF SURVEY		